

Technology Review

Edited at the Massachusetts Institute of Technology



**Shall We Go
Supersonic?**

Page 9

January, 1965

technology review

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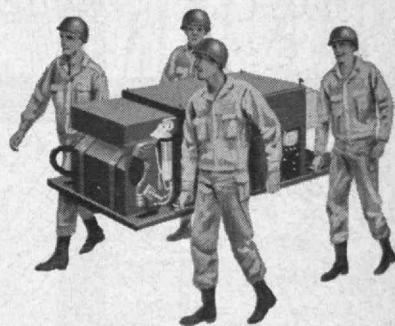
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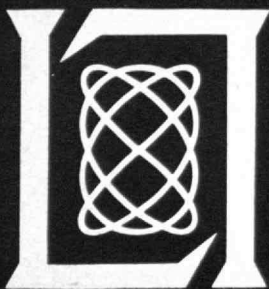
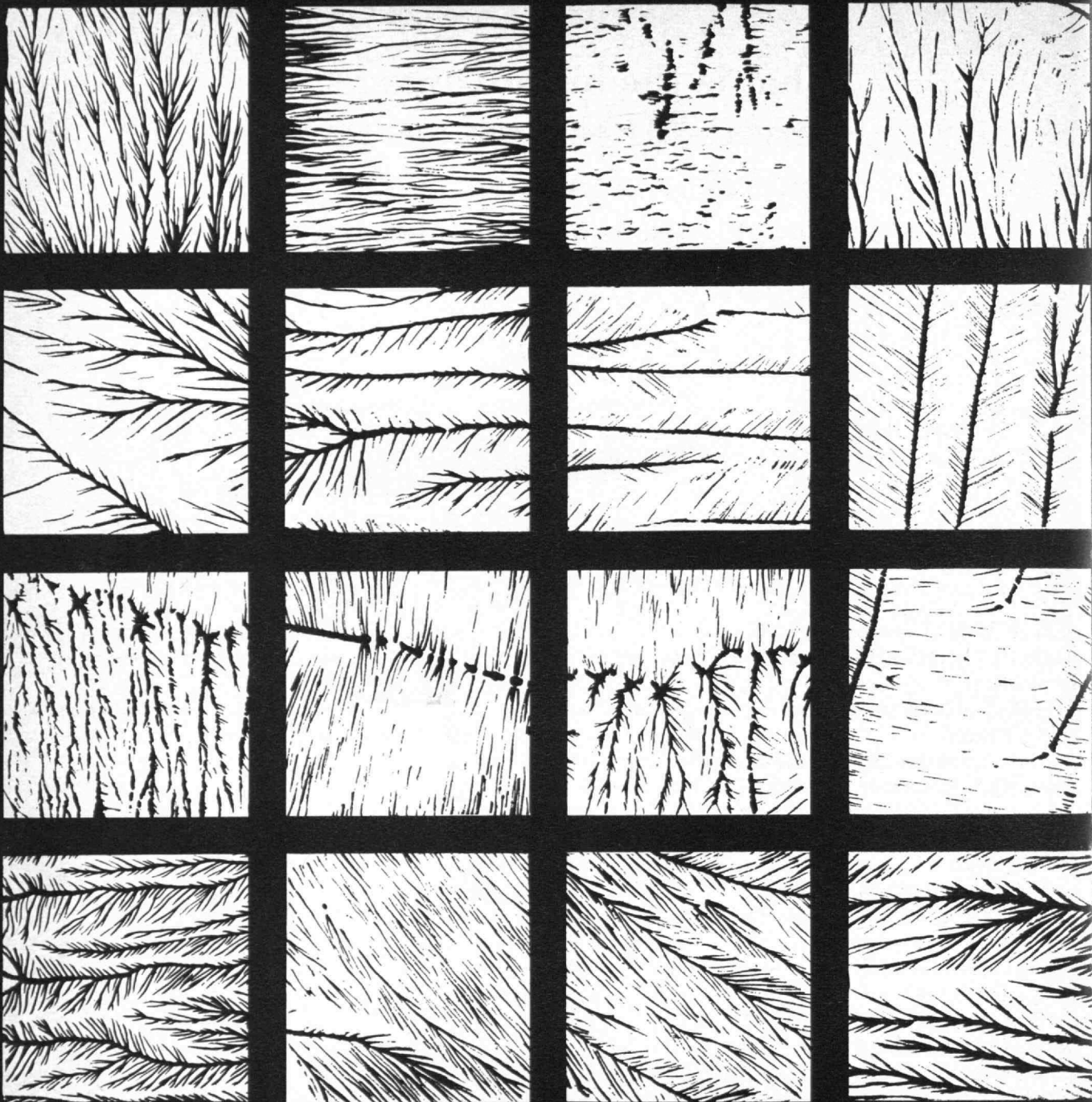
many military units: The U.S. Air Force, U.S. Marine Corps, U.S. Navy, U.S. Army, NASA, as well as with foreign military groups.

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An Accelerating World

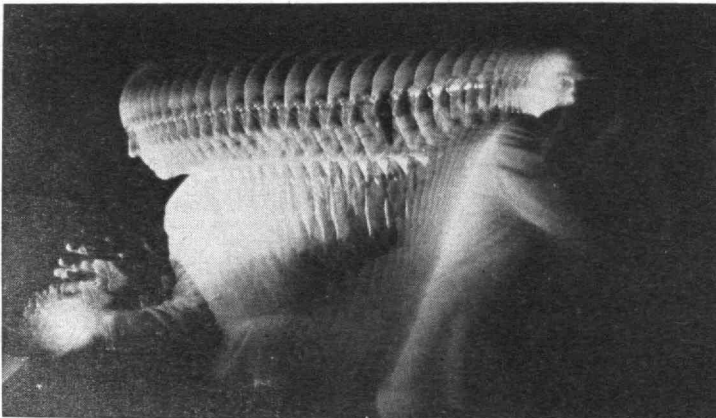
THE COVER this month shows a model of the Concorde, a supersonic transport yet to be built. The shadow it has cast over the future of the American aviation industry is discussed on page 9. Other omens of technological and social change are stressed throughout this issue.

The National Interest in Supersonic Transport

Secor D. Browne of M.I.T. and William Barclay Harding present the case for investment of public funds in faster aircraft for civilian airlines.

Hands of M.I.T.

Jean-Phillipe Charbonnier's camera catches the eloquence of gestures in a series of pictures depicting life on the campus in Cambridge today.



Professor Harold Edgerton, '27, as photographed by Charbonnier.

English Channel Surveyors Use Sonic Fingers

Seismic profiling systems developed by Professor Edgerton are helping the engineers explore the floor of the sea.

The Trend of Affairs

Freshman physics becomes more sophisticated . . . Vannevar Bush, '16, patents a free-piston hydraulic pump . . . and the Institute community continues to yield other news.

The New Tools throughout the Institute

Two more big computers have joined the array at M.I.T., and the jargon grows, yet the computer itself is de-emphasized.

A Decisive Decade for Alumni

D. P. Severance, '38, describes the changing membership and challenges facing the M.I.T. Association.

Round Hill Estate to Become a Retreat

The great antennas at the late Colonel E. H. R. Green's summer home are coming down after making considerable history.

The Theater

The "two cultures" have been bridged in two plays: The serious one has closed, but the comedy survives.

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Individuals Noteworthy



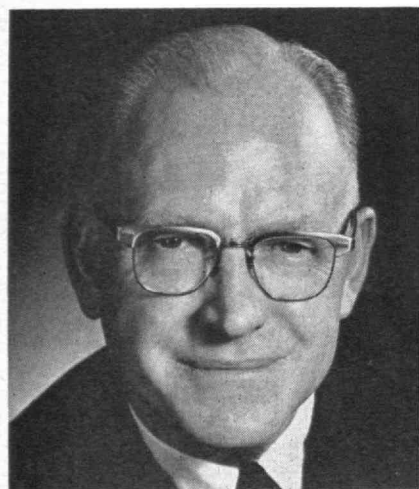
New York's Chancellor

ALBERT HOSMER BOWKER, '41, was inaugurated November 5 as Chancellor of The City University of New York in academic ceremonies attended by 350 delegates from American and foreign universities and learned societies. Dr. Bowker now directs an educational system with nine separate senior and community colleges having a total enrollment of more than 130,000.

Dr. Bowker went to City University of New York in 1963 after 16 years at Stanford University, where he had been dean of the Graduate Division. Dr. Bowker received his bachelor's degree from M.I.T. in mathematics and spent three years at the Institute as a research assistant in the Mathematics Department.

Honored Professors

INSTITUTE Professor *Francis O. Schmitt* has received the honorary degree of M.D. from the University of Göteborg in Sweden. . . . Visiting Institute Professor *Edwin H. Land* is the 1965 recipient of the medal of the Industrial Research Institute, Inc. . . . Professor *Olaf Andreas Hougen* of the University of Wisconsin has been given the *Warren K. Lewis*, '05, Award in Chemical Engineering.



BRONZE BEAVER award-winners last year included *Gaynor H. Langsdorf*, '32 (left) and *Donald G. Robbins*, '07. Mr. Langsdorf was honored for his *Second Century Fund* and *Educational Council* work, and Mr. Robbins for his service as a class officer and *Alumni Fund* leader.

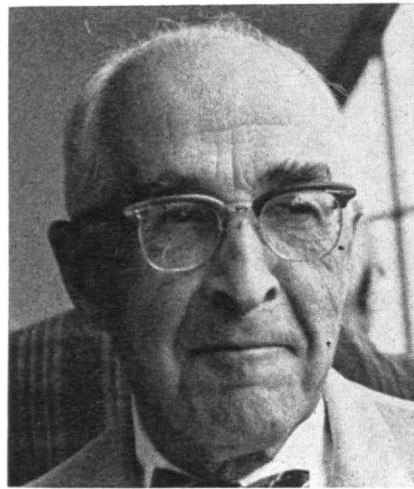


Albert H. Bowker, '41

In Electrical Engineering

JOSEPH WEIZENBAUM, an authority on computer technology and programming, has been appointed an associate professor in the Department of Electrical Engineering.

A graduate of Wayne State University, he has worked with the Computer Control Company, the Bendix Computer Division, and the Computer Laboratory of General Electric Company. He was instrumental in devising the ERMA system for the Bank of America and has been an honorary research associate at Stanford's Computation Center.



Sedgwick Professorship

A CHAIR named in honor of the late William Thompson Sedgwick, the first Head of the Department of Biology, has been established at M.I.T. and Professor Salvador E. Luria has been appointed to fill it.

Professor Luria is widely known for his work on biology of viruses and on the molecular genetics of bacteria and viruses, and also has an enviable record as a teacher. After receiving an M.D. degree from the University of Turin in 1935, he carried on research in microbiology at the Curie Laboratory of the Institut du Radium. He came to the United States in 1940, continued his work at Columbia, Vanderbilt, and Princeton Universities, and taught at Indiana University and the University of Illinois before coming to M.I.T. in 1958. In 1963 he received a Guggenheim Fellowship to spend a sabbatical year at the Pasteur Institute. He has written more than 100 papers on microbiology, and is a member of the National Academy of Sciences, the American Academy of Arts and Sciences, and the American Philosophical Society.

As Sedgwick Professor of Biology, he will continue his teaching and also set up new laboratories in the Center for Life Sciences.

Barrington President

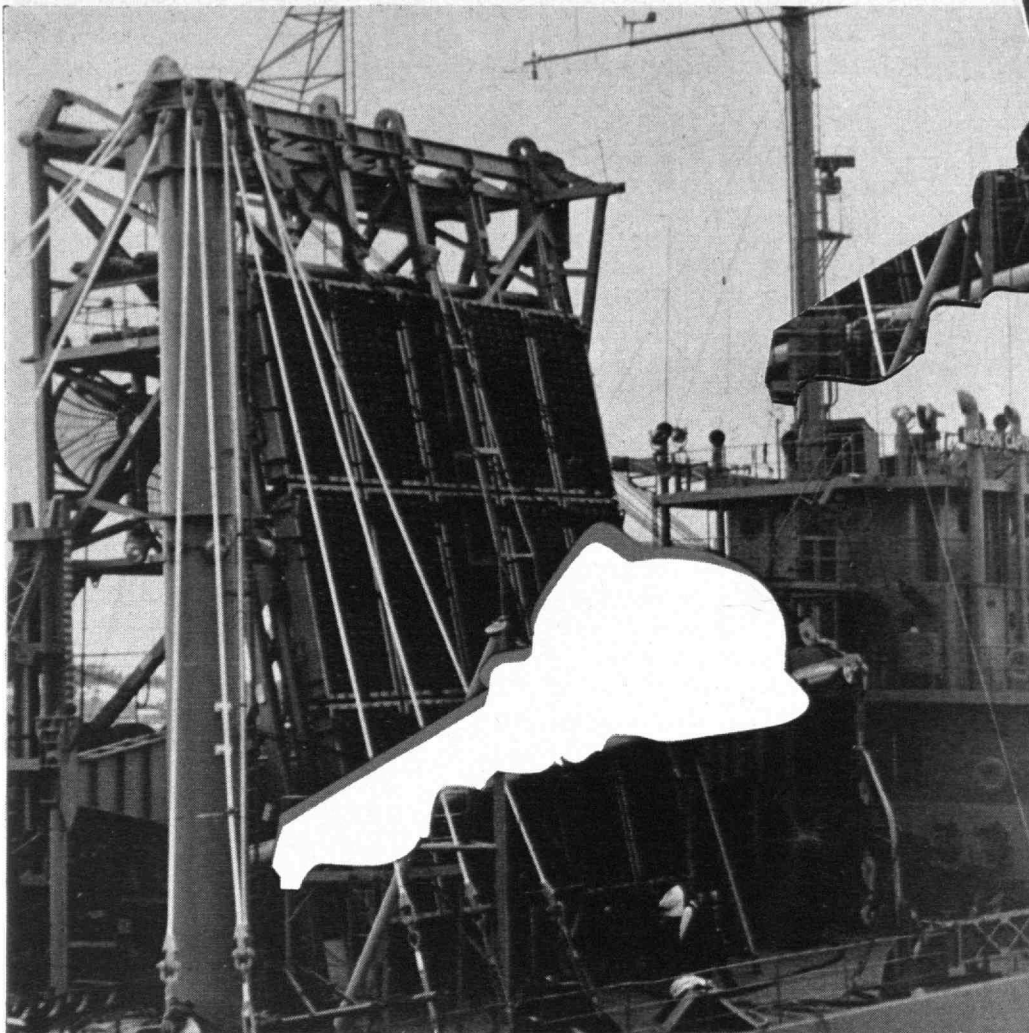
CHARLES E. HUMMEL, '49, will become president of Barrington College in Rhode Island next August. Mr. Hummel is now graduate director of Inter-Varsity Christian Fellowship at the college, and formerly was an engineer with Esso Standard Oil Co., and the Grasselli Chemical Division of E. I. du Pont de Nemours & Co. As President he succeeds Howard W. Ferrin, who becomes chancellor.

Overseas Commands

THE U.S. ARMY Strategic Communications Command has established two subordinate overseas commands to execute its missions. In Europe, Colonel *Irving R. Obenchain*, '51, commands the new unit with headquarters in Neue Kaserne, Schwetzingen, Germany; and in the Pacific, the commander is Colonel *Latimer W. MacMillan, Jr.*, '39, with headquarters at Schofield Barracks, Oahu, Hawaii.

(Continued on page 32)

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Feedback

The Nature of Man (in Brief)

THE NOVEMBER, 1964, issue of Technology Review warrants a note of commendation.

In these busy times when one finds it difficult to read the important material in his own field, and still leave time to spend with his family, to do some reading of a broadening nature, and perhaps even to make a contribution other than of a routine nature in connection with his work, a series of articles such as you ran on "The Nature of Man" is welcome. To begin with, the lecturers were outstanding leaders in their respective fields. The articles concisely reported the new developments reviewed by the speakers completely enough to meet the laymen's needs.

ERNEST KIRKENDALL,
Secretary and General Manager
United Engineering Trustees, Inc.

Strike Up the Band

MORE emphasis should be placed in undergraduate years on the associations that are intensified by group

meals and singing together. The comradery thus started will be carried over into later life by frequent alumni gatherings where the singing of old songs brings back fond memories. I remember with nostalgia such songs as:

Take Me Back to Tech! On Rogers Steps, Our Jolly Old Seat of Stone, A Devil When Young, The Book that Getty Wrote, Songs of M.I.T., The Cardinal and the Gray, and, of course A Stein Song.

The list could be expanded to include such old standbys as the following: *Nut-Brown Maiden, My Last Cigar, There is a Tavern in the Town, Bring Back My Bonnie to Me, and On the Road to Mandalay.*

Some of the songs in the first list are no longer applicable to the beautiful buildings on the bank of the Charles River, but prizes could be given by the Alumni Association to develop some. Then there are the famous Tech Shows from which tuneful songs could be selected.

But the old song books are out of print. The editions I have are dated 1903, 1907, and 1929 and

copies are no longer available. The situation is so desperate that I have seen an orchestra leader playing from a sheet of music before him on a chair while the others ad libbed in harmony.

I have heard the West Point Glee Club and famous opera singers in classical recitals sing for contrast, amusing topical songs. Why should M.I.T. be so proud of its high scholastic and research standards that it cannot make possible similar songs?

GREGORY M. DEXTER, '08
Scarsdale, N.Y.

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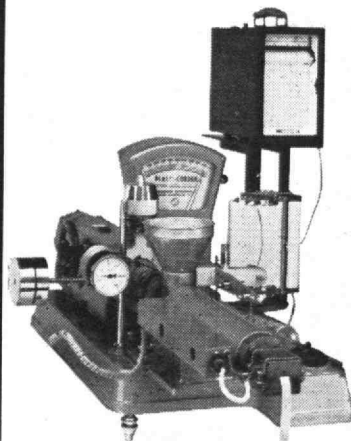
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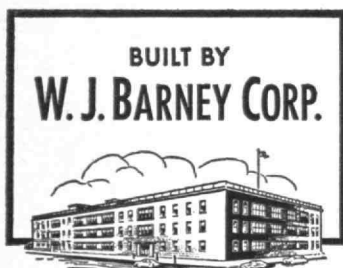
W. T. BLAKE '37,
Vice President
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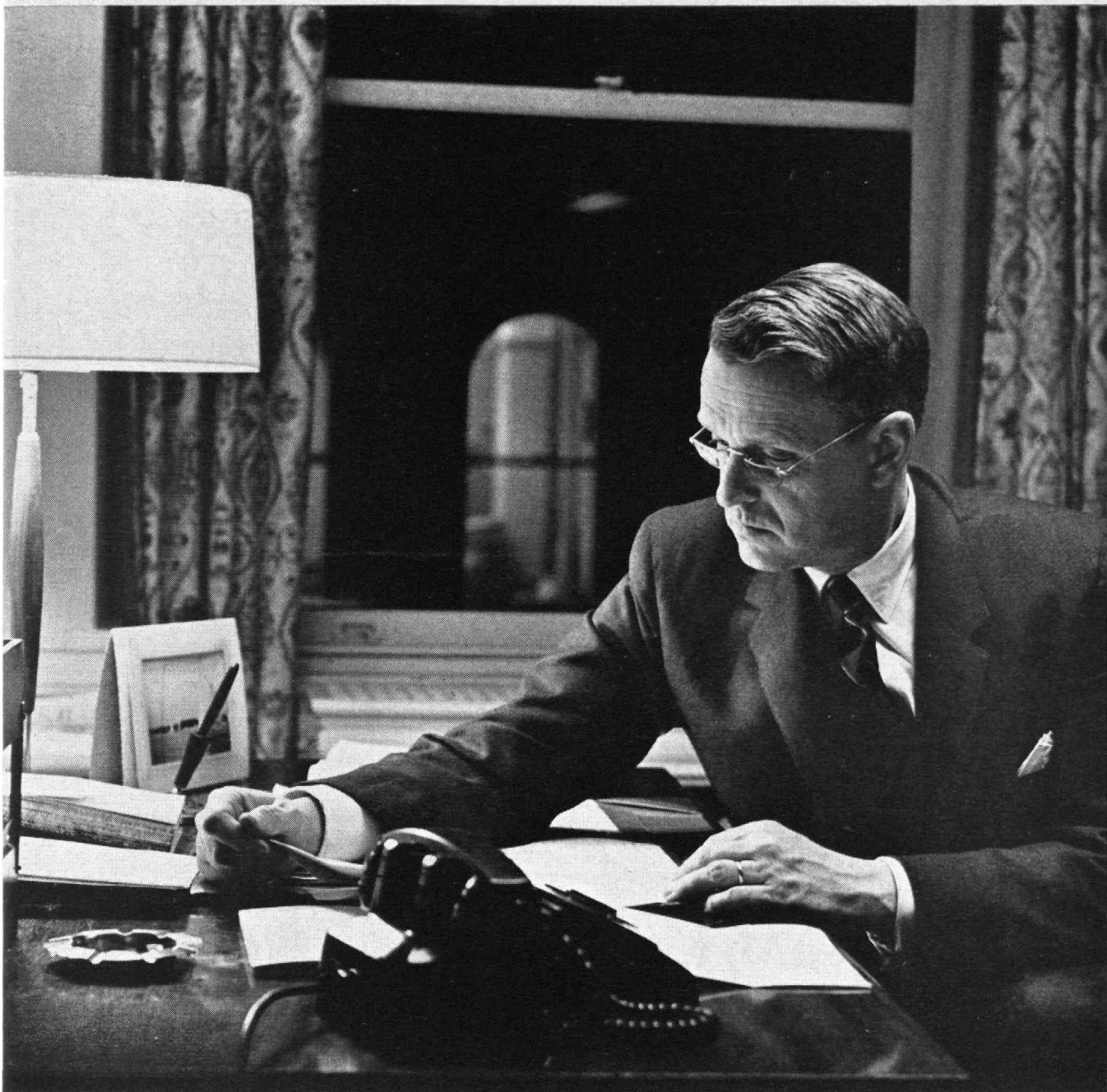
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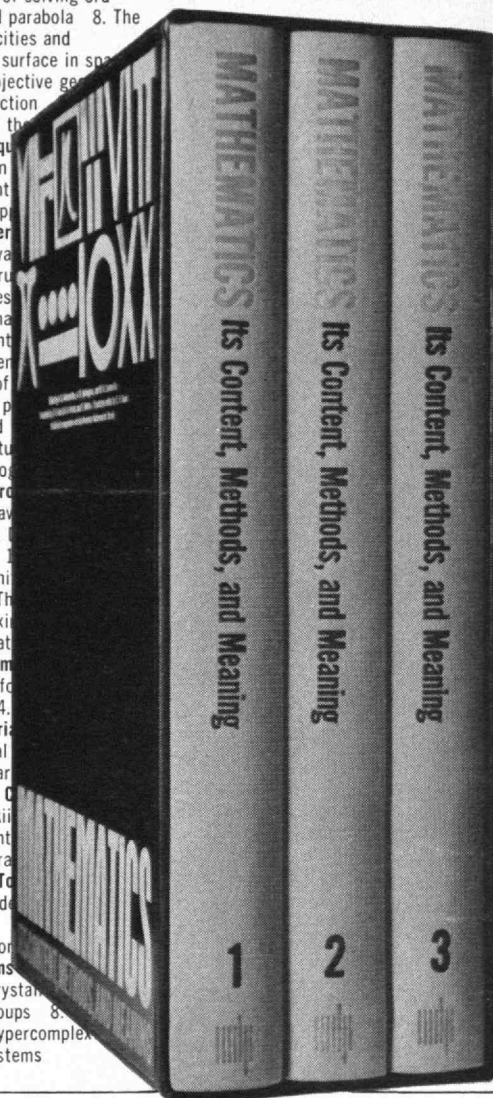
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The National Interest In Supersonic Transport

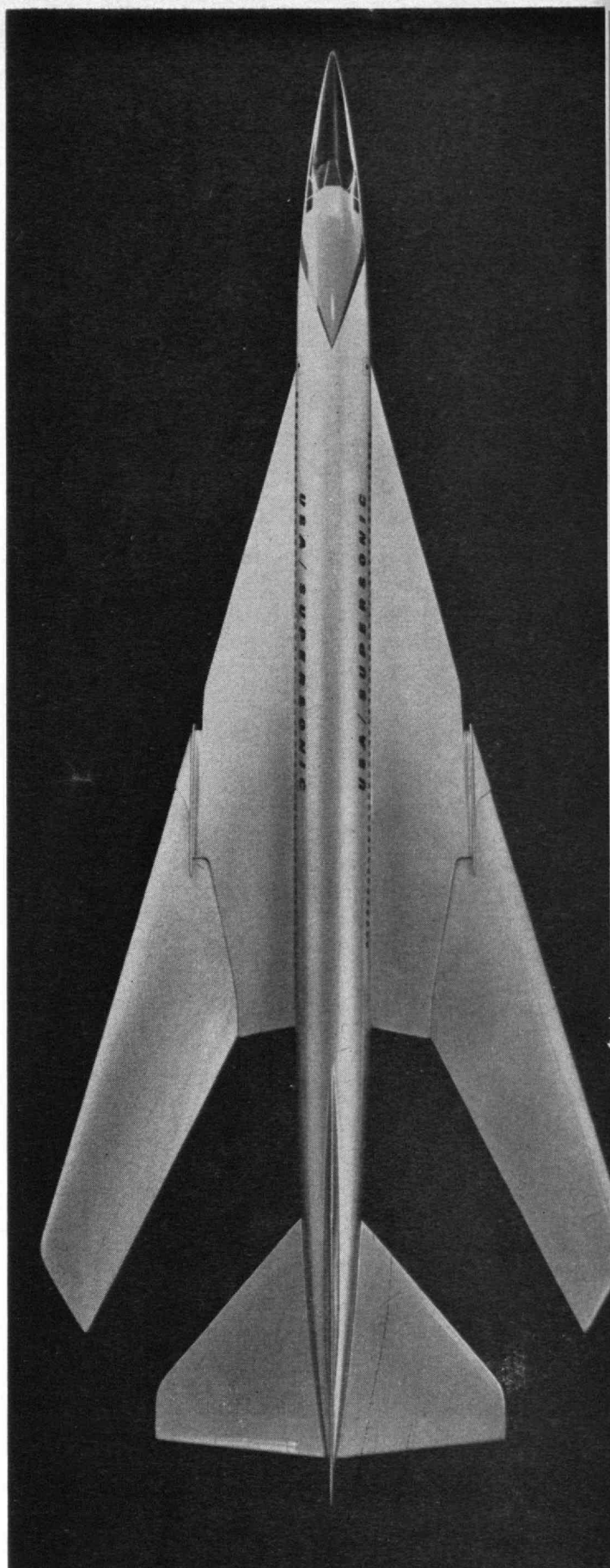
Investment of public funds in faster aircraft can be justified by President Lincoln's creed

By Secor D. Browne and
William Barclay Harding

THE far-reaching decision has been made that the United States will design and build a supersonic air transport plane—and thereby maintain our leadership position in international aviation." This clear policy statement was made in the preamble to the Democratic Party Platform for 1964. The Republican Party Platform was less specific but it, too, called for development of advanced aviation technology. Whether the United States will have a supersonic transport (SST) program will depend primarily on the action to be taken by Congress at its next session. If the platforms of the political parties are not promptly translated into enabling legislation, the program will probably suffer irreparable damage.

The descendants of people who watched the iron horse spew live sparks across woods and fields a hundred years ago and who were concerned over the problems of fire and terrified livestock are now concerned over the sonic boom and other problems—some real and others that may prove imaginary. But even with modern technology, the "boom trap" is a greater problem than the spark trap. The noise problem, which on an ever-ascending scale has accompanied improved means of transportation, has become more acute for the supersonic transport.

The potential thunderclap which accompanies a large aircraft throughout its entire supersonic flight is added to today's problems of airport and community noise which plague suburban communities, airlines, and airport operators. The need to attenuate the force of the



Wings that would be swept back when cruising at supersonic speed are a feature of a transport that Boeing has proposed that America develop to meet foreign competition.

sonic boom requires operation at extremely high altitudes, where possible effects of ionizing radiation are not yet clearly understood. Just as today's subsonic transport lives under an uneasy truce with its community neighbors, which the supersonic transport can not be permitted to disrupt, it operates under an air traffic control system which is barely adequate for today's high flight speeds and frequencies, and which would be completely inadequate for supersonic transport—the economics and basic design of which simply could not permit the luxury of long traffic delays or diversions to distant airports. But traffic control and other problems such as fuels and structural materials are within today's aviation technology. It is primarily the noise that still poses the great problem.

Government's Role

The supersonic jet transport would have been a normal development from the subsonic jet transport, just as the airplane has been developed year by year in speed, range, and payload since the Wright Brothers, but for two factors which have upset what we have come to consider the "normal" process:

► The first factor to disrupt the pattern was the decision that there was no military requirement for a supersonic transport. Without the support of a directly related research, development and production program for a military supersonic heavy bomber or transport, the design, development and production of a civil supersonic transport has had to be self-supporting and self-justifying from the outset. Related programs of basic research and development in such areas as materials and fuels have helped, to be sure, and without them a supersonic civil transport system would not have been conceivable.

► The second factor was competitive pressure from outside the United States. Although now threatened by

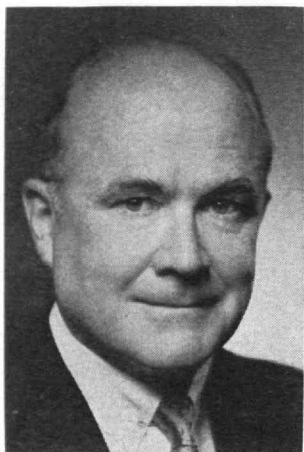
the Labor Government in Britain, the Anglo-French Concorde civil supersonic transport, with a developmental history of well over five years and a total commitment to date by the two governments of more than \$800 million, put the United States on notice that it must initiate a program to be competitive in point of time to the Concorde's operational date and superior in quality and performance. The still unknown date of the appearance of a Soviet civil supersonic transport airplane is a further competitive factor. It appears that this is an occasion for the government to act as Abraham Lincoln said: "To do for the people what needs to be done, but which they can not, by individual effort, do at all, or do so well, for themselves." The case for government support of the development of a United States civil supersonic transport airplane in terms of the national interest can be based on both speed and economics.

Speed

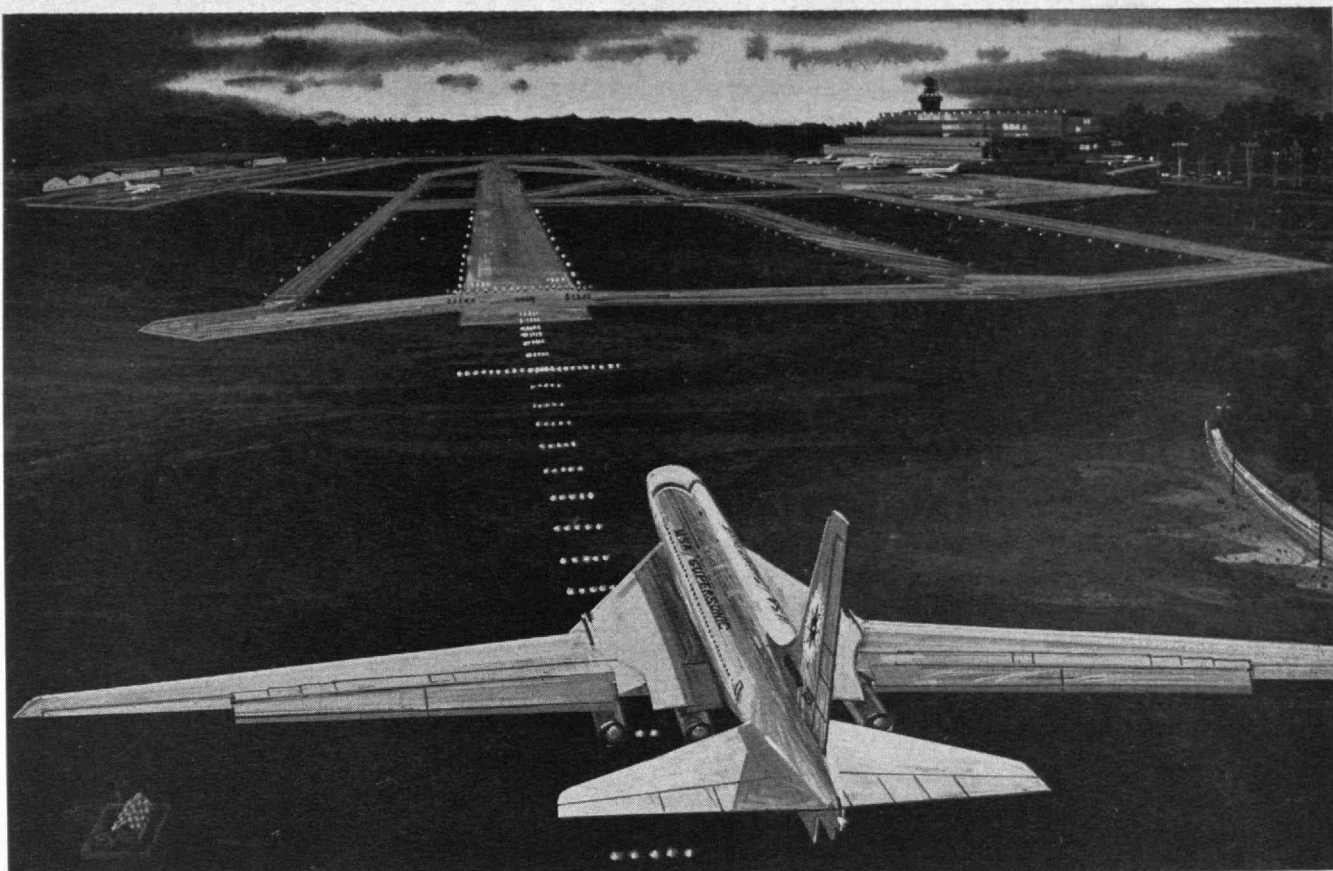
The need for a supersonic transport usually is justified principally on the basis of speed. This is emotionally more attractive than other justifications but unfortunately, at the present time, is vulnerable to a fairly effective mixture of editorial logic and nostalgia. The crawl between Kennedy International Airport and downtown New York and the corresponding crawl from London Airport to Victoria Air Terminal which harass today's traveler by subsonic jet could be accelerated, it is often pointed out, to save passengers' time and nerves sooner and cheaper than halving the time for a transatlantic three-martini nirvana. The nostalgia comes naturally to most people since there are times when we all wish that automobiles, airplanes and life in general would revert to the cruising speed of the stagecoach, although it is doubtful that we would simultaneously wish to revert to the days of surgery without anesthesia or houses without electricity or central heating.

Improvement in transit time between town and airport is important, but increased speed of air travel is also important in terms of public necessity and convenience. We have not developed a device to manufacture time. We have only developed devices to utilize time more effectively. The computer does not solve problems that man can not solve. It solves them faster. The subsonic jet similarly makes the time of the lawyer, doctor, statesman, businessman and vacationer more available for his particular goal. The supersonic transport airplane will make more of this time available and since, in the sequence of feet, hoofs, wheels and wings, man has promptly adopted the fastest transportation mode available, he will do so again.

Calculations of speed and performance that show a limit to eventual aircraft requirements should be viewed with caution, even when these calculations are made by the most experienced and competent economic analysts. Some years ago the turboprop transport was demonstrated, by what seemed to be sound economic and performance analysis, to represent the ideal transport in terms of speed and performance, and there were dire



Professor Browne (left) of M.I.T. is a specialist in flight transportation, and Mr. Harding is vice-chairman of Smith, Barney & Co., an investment banking firm actively associated in financing transportation. Both authors were among the participants in a panel discussion of supersonic transportation arranged by the M.I.T. Alumni Center of New York last spring.



When landing, the Boeing plane's wings would span 173 feet, but aloft at high speed they would extend for only 86 feet.

predictions that the subsonic jets would fly empty and bankrupt the airlines. Somehow, things didn't work out that way. The public preference for the faster mode was immediately apparent and the growth in traffic has generally justified the transition from the turboprop to the jet airplane. Economic analysts have to deal mostly with known factors in making their projections, but unforeseen technical breakthroughs seem always to occur in major scientific programs in which large amounts of money can be spent on research. Heavy allowances also must be made for factors such as human nature and public preferences which do not lend themselves to computer programming.

Economics

The public need to sponsor an SST program probably can be demonstrated more solidly, if less glamorously, on the basis of economics than on speed. U.S. skills in the design and development of subsonic jet transport aircraft and engines and, particularly, U.S. ability to tool for and produce large numbers of safe, economic, high-performance, dependable machines have captured a major share of the world's civil air transport markets. Although there will continue to be a market for subsonic jets, U.S. failure to meet the supersonic transport challenge would effectively mean abandonment of our leadership in supplying the world's international civil aviation markets.

Aircraft exports may not be impressive as a percentage of net trade balance but the total in terms of dol-

lars is impressive. In terms of employment and wages in the aircraft and engine industries, with their many thousands of suppliers and subcontractors, aircraft exports are significant. If, to the net aircraft exports in dollars which would have been lost had the U.S. not had a subsonic jet program, one adds the number of dollars that would have been spent by our own airlines to equip their fleets with foreign aircraft, we reach a significant and formidable total amount of money in terms of national economic interest. Supersonic aircraft will cost, without spares, from \$15 to \$40 million each, and several hundreds will be required. Hence, the public has a real interest in maintaining the United States dominant position in the world civil air transport market.

There is no evidence that this supersonic transport project will be of any financial benefit to the stockholders of American aircraft manufacturing companies in the foreseeable future. Douglas made money on some of its piston-powered commercial aircraft and Boeing has about reached the break-even point on its subsonic commercial jets of various types. Nevertheless, the industry as a whole lost nearly \$1 billion (not reflecting tax charge-offs against other income) on the subsonic jet program. The nation, however, gained in many ways such as trade balance, balance of payments, improved transportation and the economic well-being of the millions of people directly or indirectly affected. If the word "subsidy" is going to be used, we might say that the stockholders of the aircraft manufacturing com-

panies involved have subsidized the United States to the extent of half a billion dollars (after tax credits) for the subsonic jet transport program.

The national interest is clear. Unfortunately, the combination of the factors of no military support program and direct foreign competition indicate a program and a schedule for the development of a U.S. supersonic transport that is beyond the financial strength of the industry. This leaves the task up to the government.

The amount of government support needed for the U.S. supersonic transport program was originally estimated at \$1 billion. The government's requests for proposals stipulated cost-sharing between the government (75 per cent) and the aircraft and engine manufacturers (25 per cent), the government's percentage to be reimbursed on the basis of royalties paid by the airlines in the course of the operating life of the production aircraft. This would require too great a commitment from both airframe and engine makers, and prompted the recommendation in December, 1963, of the Black-Osborn report that the industry participation be reduced to 10 per cent, the same figure recommended a year earlier by the FAA Advisory Committee headed by General Orville Cook.

The United States government's desire to emphasize to the public the cost-sharing nature of the program, and the still undefined details of reimbursement by royalties, contrast with the Anglo-French governments' investment of over \$800 million without counterpart funds by private industry or reimbursement by the user airlines. The implications of this direct attack on the United States present dominant position in the world aviation market and the competitive price structures involved should be fairly clear. The British and French governments expect to get their money back. But they are not trying to define this return in terms of a cumbersome and perhaps self-defeating cost-sharing and royalty program. They expect to get their money back in terms of the advantage to their aircraft industry in particular and their economy in general by assuming leadership of the world's aviation industry.

Financing Vs. Risk

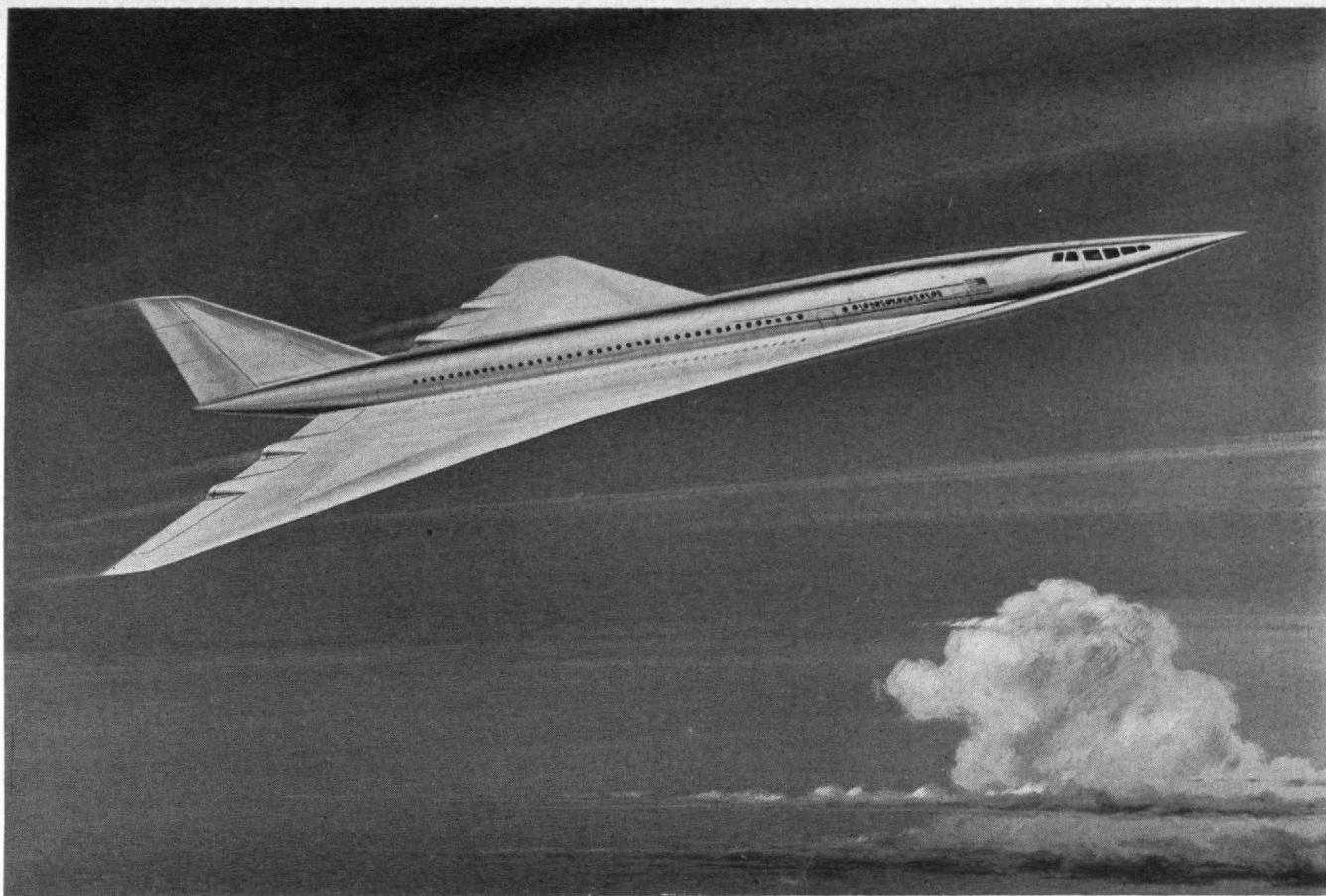
The concept of a cost-sharing formula between government and manufacturers may rest on an incomplete understanding of the difference between *financing* and *risk*. The amount of financing the manufacturers can and should undertake is one thing. The amount of risk they can and should assume is an entirely different matter. The confusion may be the result of the indiscriminate use of the two terms. The facts are that the industry could *finance* a large part of the cost but could not afford to *risk* anything like the suggested amount in a program wherein it has a minority voice in not only the conduct but the very existence of the program. If the program is a success, the government's financial participation will be repaid through corporate and personal income taxes plus additional specific charges if

deemed necessary. If the program is a failure, the formula will be unimportant since almost the entire burden of the loss will, in fact, fall upon the government because the national interest will not permit the bankruptcy of so significant a segment of the national economy as the aircraft industry and the airlines involved.

Any cost-sharing formula devised for the manufacturers will inevitably have to be hedged with guarantees by the government of production quantities to be manufactured, inventories to be stocked, and tooling to be provided. Then, in the event of abandonment, rescheduling or other major perturbations in the program, the manufacturer would not have risked a disproportionate amount of his resources. The airlines can contribute to *financing* and have done so by their deposits, but should not assume *risk* until an aircraft can be built, certified and delivered. At that point, in the case of the supersonic transport, their risk in preparing to introduce and operate the aircraft becomes one in which they gamble not only their resources but their survival in the highly competitive world air transport market.

The risks of the SST program must inevitably be assumed by the government in the interest of the people as a whole. In going through the legislative steps to carry on the program, the government appears to have two choices. The first is to avow openly that government support is in the national interest and to provide only the restraints necessary in order to assure efficient performance. The second is to establish an elaborate formula, or formulae, which, in fact, will be relatively meaningless in the event of either success or failure and will only achieve approximately the same control as the usual restraints and possibly even less in view of the unforeseen and unforeseeable elements which the program must, of necessity, contain.

The financial requirements of any program will be based on manufacturers' proposals, and it is customary for the manufacturer to take some responsibility for over-running his estimated costs. In the subsonic program, the manufacturers over-ran their estimates by about 30 per cent. Even a 5 per cent over-run in the case of the much larger and less predictable SST program would be catastrophic. It is logical that the manufacturers should take some risk of over-running their costs, but it must be a reasonable risk limited by government guarantee. Perhaps the most sensible way for the government to handle this would be to follow the procedure used in military contracts and by the British-French combination in their SST development. That would be for the government to finance the entire development program on the basis of a mutually agreeable cost, plus a profit. If the manufacturer exceeded his estimates, the over-run would come out of his profits, possibly wiping out his profit completely, but his risk would not go beyond that point. As protection against his cost estimates being too high, it would be agreed that his profits would be limited to a pre-determined figure, but there should be some incentive compensation to encourage efficiency.



A supersonic transport proposed by Lockheed. Wind tunnel and other tests with models will precede final design decisions.

The technical and operational problems of the supersonic transport are equal in magnitude to the economic problems and the three categories are interrelated and interdependent. Obviously the cost of resolving or avoiding such technical problems as noise (both airport environment and sonic boom) and the development and production of special materials will be reflected in both development and production costs of the aircraft and its components and in subsequent maintenance and operating costs. Similarly, the development and production of suitable airborne and ground guidance, navigational and air traffic control equipment will be reflected in the over-all economics as will the utilization of the chosen design or designs. The risks of failure are the corollary of the economic, technical and operational problems to be resolved. Complete failure of the program for any one cause or combination of causes appears unlikely. Delays and break-throughs, however, both foreseen and unforeseen, will give the program an elasticity beyond the control of the planners, government, or industry.

Conclusions

The national interest in terms of communications (diplomatic, commercial, cultural, military) and economics (exports of, and domestic requirements for, aircraft and aviation products) justifies the investment in the development of a United States supersonic transport aircraft. Neither the traveling public nor the airlines

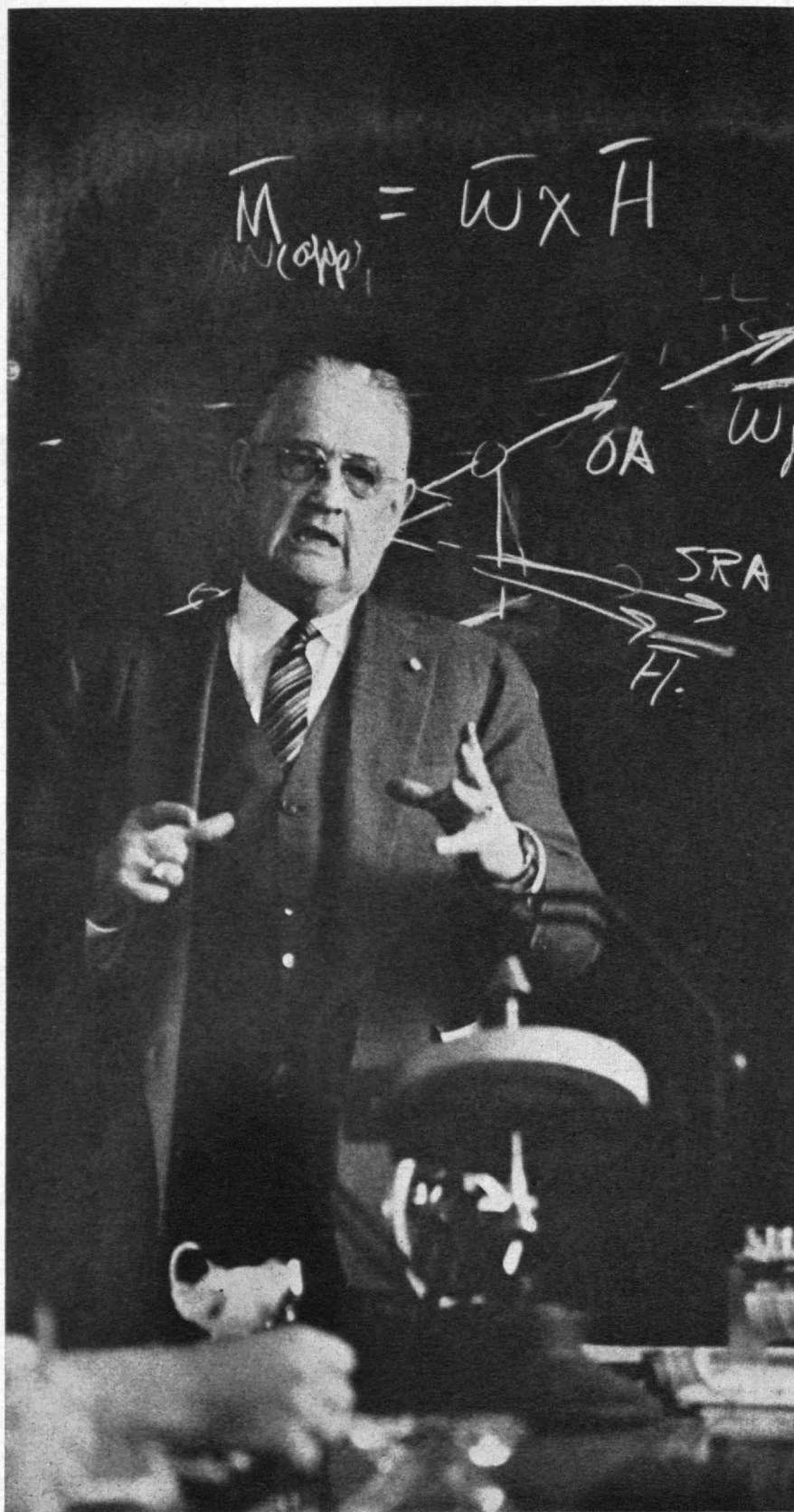
are in a hurry for SST's. The competition is to maintain our world leadership in the manufacture of transport aircraft.

The national interest requires the government to assume with minimum delay the financial risk of prototype development, which hitherto has been a by-product of relevant military programs, and of guarantees of tooling, inventory and minimum production quantities beyond the point where abandonment or stretch-out of the program would be catastrophic for a major segment of American industry. The development of successful prototypes should reduce the element of *risk* very nearly to the point where normal airline equipment *financing* procedures could be followed.

When the new Congress meets in January, 1965, the nature of the prototype program and any program of cost sharing and reimbursement must be decided and funds provided for these prototypes and their certification. Simultaneously the program of providing the subsequent investment to back up tooling, inventories, and actual production must be faced. If no enabling legislation is provided, the program must in fact collapse, although this collapse may be disguised in the form of continued preliminary design, research and development. In the complex society in which we live, our progress is paced by our scientific capabilities, and if our leadership falters in such an important area as supersonic transportation, we are beginning to lose the concept of leadership as a nation.

Hands of M.I.T.

A noted French photographer captures eloquent gestures wherever he goes on campus



Hands help Professor C. Stark Draper, '26, convey idea of inertial guidance.

MENS ET MANUS" is the motto on the M.I.T. seal. The emphasis on the hand has varied from time to time and department to department, but there is no doubt that the Institute's Faculty and students use their hands meaningfully—especially to sketch the framework of an idea or to emphasize a thought.

It is a trait that intrigued photographer Jean-Phillipe Charbonnier when he came to M.I.T. last year for the French magazine *Realités*. A small but dynamic and almost tireless traveler whose cameras have looked at much of the world, he spent many days probing for subtle visual clues to M.I.T.'s uniqueness.

Where he saw the expressiveness of hands, *Realités* also took note of the practical side in explaining to its readers that M.I.T. develops a student's initiative by giving him problems to handle "often down to the construction of the apparatus he needs."

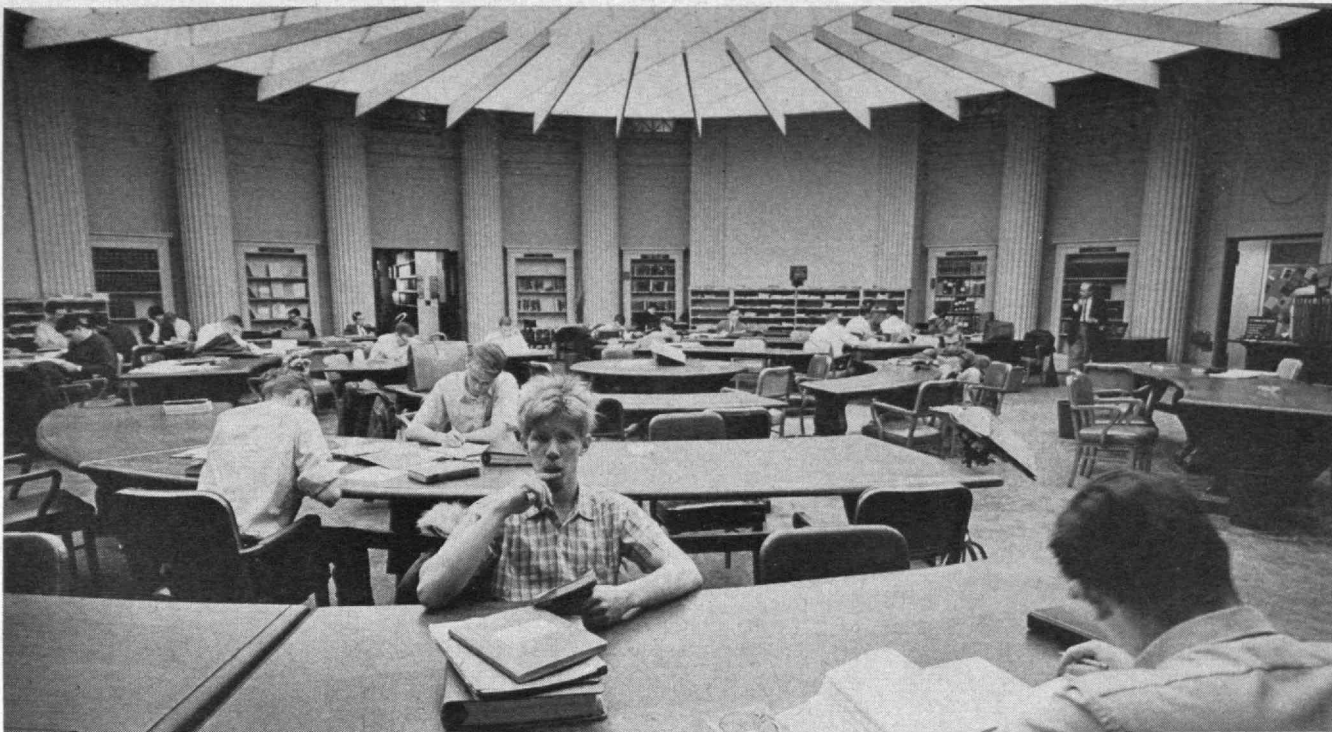
The magazine's article on M.I.T. was part of a special June, 1964, issue entitled, "The Future is Now," and its reporter, Danielle Hunnebell, described what it means to be a student in dramatic phrases:

"The selective process, the competition, the difficult nature of the subjects taught, the amount of work required . . . the constant tests, the stimulation . . . the seething of ideas in all fields . . . The M.I.T. man is not a particularly relaxed animal.

"He concentrates silently for hours and weeks on an oscillating infra-red laser [or] a machine for plotting optical networks . . . He barely takes time to gulp a hamburger at Walker."

Lastly, she wrote, he "bears no resemblance to the athletic, easy-going student who will smile wistfully all his life when he looks back on his college years."

Mademoiselle Hunnebell also included the old expression that an M.I.T. education is like a drink from a fire hose, in French: "*Chaque etudiant reçoit en plaine figure, comme ils disent, le jet du pompier. . .*"



The hand of a student flies up when startled by a camera while studying in the engineering library under the big dome.



When a digital computer solves complex engineering problems, the digits of the human hand express the student's reaction.





In the dormitories, students gather to discuss assignments—and find more gestures are helpful in exchanging concepts.



In the chapel (at left) mass is celebrated beneath the cascading reflections of Sculptor Bertoia's altar screen.

Professor Ascher Shapiro, '38 (right), emphasizes visual presentations as a means of instruction in fluid dynamics.

English Channel

Surveyors Use

Sonic Fingers

Professor Edgerton's "Boomer" helps the planners of a tunnel explore the floor of the sea

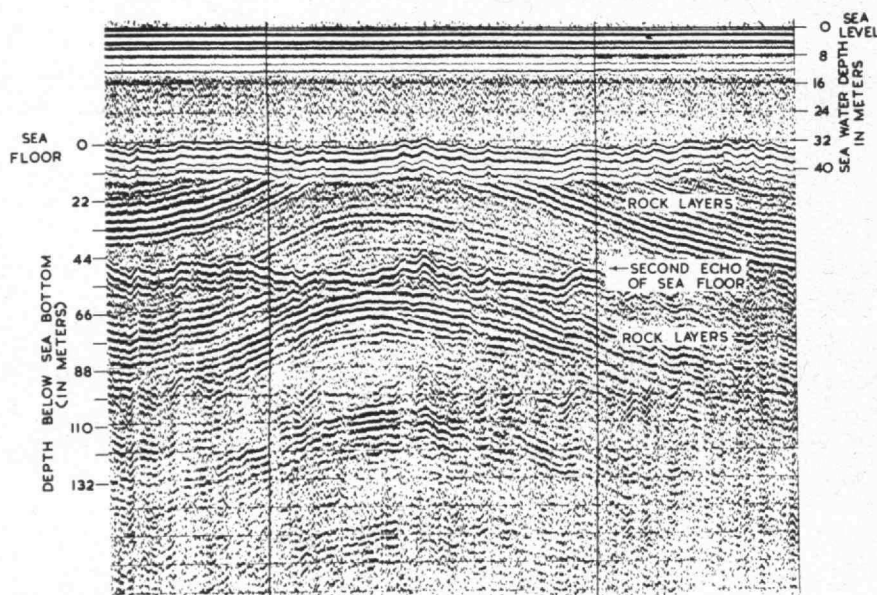
A GROUP of American engineers and oceanographers spent about two months last fall poking sonic fingers into the floor of the English Channel. Using seismic profiling systems developed by Professor Harold E. Edgerton, '27, they explored the sub-bottom geological structure of a segment of the Channel through which the proposed Dover-to-Calais tunnel would pass. Their results will help in determining the route of what is now known in Europe as the "chunnel."

Seismic profiling systems for oceanographic studies are echo-sounding instruments that analyze the layers of material under the ocean floor by the reflection and absorption of acoustical pulses. In the Channel, the survey group from Edgerton, Germeshausen & Grier, Inc., used a high-power spark "boomer," a type of device developed in collaboration with Professor John B. Hersey of M.I.T. and the Woods Hole Oceanographic Institution. It consists of heavy-duty electrodes inside a metal cage, where the explosive release of electrical energy produces a plasma bubble that generates a very penetrating low-frequency sound wave. Echoes of the sound pulses are picked up by a hydrophone and recorded electronically.

For the Channel survey, the sparker and hydrophone were towed on opposite sides of the ship at a noise null point near the bow, according to Edward A. Colson, '40, head of the firm's systems division, and Wayne A. Kearsley, '58, manager of the division's oceanographic



Engineers aboard a ship provided by the Channel Tunnel Study Group lower sparker apparatus into the sea to find out what lies beneath the Channel's floor.



This is one of the "pictures" they made with sound pulses, which are reflected or absorbed in varying degree by rock layers, chalk beds, fine silts, and clay.

group. With the ship proceeding at five knots, the "boomer" system triggered 1,000 watt/second electrical pulses producing sound waves that penetrated up to 600 feet into the Channel floor.

The surveyors sailed along predetermined lines of a grid covering 160 square miles between the coasts. Ship positioning was maintained by a Decca Hifix navigation system, and EG&G engineers, including Martin Klein, '62, installed an automatic fix-marking system that

marked the seismic record and the depth-sounder record and triggered the Decca system to print out position co-ordinates.

The survey was made for the Channel Tunnel Study Group, a British-U.S.-French consortium of four companies, and its purpose was to bring to light erosional pockets, faults, or other geological formations that would be important in deciding whether to build the "channel" by tunneling, or by immersing tube sections on the Channel floor.

The Trend Of Affairs

The Physics Course for Freshmen

THE SCIENCE TEACHING CENTER at M.I.T. was established in 1960 to facilitate innovation and experimentation for the improvement of the content and teaching of science courses at the university level. It is developing a variety of integrated learning aids, including films and experiments, which are intended to provide diversity and coherence in an introductory college physics course. Its methods have been similar to those by which the Physical Science Study Committee (PSSC) developed a new high school course.

Thirty-six per cent of the freshmen now at M.I.T. studied the PSSC course in high school. This prepared them for a more sophisticated approach to college physics than was previously possible, and a new physics course was developed for them in the Science Teaching Center under the direction of Professor Anthony P. French. It was tried out on a small group of students last year and proved so effective that this fall all freshmen, approximately 900, embarked on the new two-year physics sequence.

The course continues, to a certain extent, the presentation of the view of nature first offered by the PSSC, says Dean Jerome B. Wiesner of the School of Science.

A Disarmament Proving Ground?

ALEXANDER RICH, Professor of Biophysics at M.I.T., and Aleksandr P. Vinogradov, Professor of Geochemistry at Moscow University, jointly have suggested that the U.S. and the U.S.S.R. consider disarmament in the Arctic. Both nations have agreed not to use the Antarctic for military activities, and the professors believe that efforts might be fruitful now to evolve a system of inspection and set of rules for disarmament at the earth's other pole.

It is the only area, they point out, in which the United States and Russia have a common frontier, and an agreement might be reached there without involving other nations. That agreement, they say, might stipulate that neither nation would keep nuclear weapons or delivery vehicles in certain regions, yet permit each country to retain such defense installations as our Distant Early Warning System.

The Kamchatka Peninsula, they also note, is the site of numerous earthquakes, and inclusion of it in the region disarmed might facilitate reaching an agreement to ban underground nuclear tests in addition to the atmospheric tests that have been banned.

Professors Rich and Vinogradov have both participated in Pugwash Conferences on Science and World Affairs, and their article on "Arctic Disarmament" was published in the *Bulletin of Atomic Scientists*.

Sieves for Salt Water

PLASTIC MEMBRANES for taking the salt out of sea water are being developed in the M.I.T. Department of Chemical Engineering. They appear to be promising materials for large, economic desalination plants to produce new supplies of fresh water.



Graduate student Allan Douglas peers through "ion sieve."

Some of these polymer membranes are "molecular sieves" and others are nonporous jellies. Both types act to hold back salt ions while letting water molecules pass through. Just how some of them work is not entirely understood, but research is providing some answers, according to *M.I.T. Reports on Research*.

Although a membrane of cellulose acetate can strain out 97 per cent of the salt, no one knew why it was less than perfect. Experiments directed by Professor Alan S. Michaels, '44, have shown that the tiny pores in the material fluctuate in size, thus letting 3 per cent through. Cellulose acetate is a fragile material, however, and may be replaced by a new class of polymers, called polyion complexes, which have been developed at M.I.T. Although these are stronger, they have proved to be less efficient.

Other experiments directed by Professor Raymond F. Baddour, '49, are aimed at developing "ion sieves" in which controlled pores are formed by template salt molecules that are later leached out. Besides this research on synthetic membranes, an effort is being made to find out whether it is possible to duplicate natural membranes, like those of salt water fish.

Food Preservation

IRRADIATION can extend the storage life of fish and shellfish, the American Institute of Chemical Engineers was told at a recent meeting in Boston.

"The results of studies thus far," said Louis J. Ron-sivalli, '61, of the Bureau of Commercial Fisheries laboratory in Gloucester, "indicate that clam meats and haddock, cod, pollock, and ocean perch fillets can be held at 33 to 35 degrees F. in an acceptable condition for at least one month after treatment with low doses of gamma irradiation (150-450 kilorads)."

Measuring Light's Speed

AN EXPERIMENT is being prepared in the M.I.T. Research Laboratory of Electronics to measure the speed of light with unprecedented accuracy by using an atomic clock as a stop watch and the wavelength of green light from a mercury lamp as a tape measure. Instruments are being set up and tested with which it is hoped that the speed of light can be measured at least 10 times as precisely as heretofore.

The experiment has been under active development for several years by Professors Jerrold R. Zacharias and John G. King, '50, of the Department of Physics, Professor Campbell L. Searle, '51, of the Department of Electrical Engineering, M. A. Yaffee of RLE, and George W. Stroke, '56, who is now at the University of Michigan. It was described in a technical paper at the recent Northeast Electronics Research and Engineering meeting in Boston.

Efforts to measure the speed of light accurately are almost as old as the emergence of modern physical thought itself. Galileo in the Fifteenth Century tried to measure it by using two men sending lantern signals to each other from atop neighboring mountains and concluded that if light had a finite speed then that speed must be very great indeed. In the Seventeenth Century the Danish scientist Roemer, clocking eclipses of the moons of Jupiter, came up with an estimate of 300,000,000 meters per second. Presently, the speed of light is given as about 299,793,000 meters per second, plus or minus 300 meters per second. The M.I.T. scientists hope to reduce the margin of error to less than 30 meters per second.

In the experimental setup, a microwave signal (9,192 megacycles per second) is obtained from a klystron, the frequency of which is slaved—or phase-locked—to a cesium atomic clock. This means the tube output is very carefully controlled in terms of frequency. The microwaves are fed into a hollow quartz cylinder a foot high with an inside diameter of six inches. This resonance cavity is polished to an extremely smooth finish (no deviations greater than 2×10^{-5} inches), and was made for the M.I.T. experimenters by specialists at Boston University Department of Physics. A movable plunger—or piston—is at the bottom of the cylinder and as it moves up and down it changes the length of the resonance cavity. The microwaves entering the cavity at the top go through a series of resonances as the piston lengthens the cavity; i.e., levels where the microwaves reflecting up and down in the cavity are in perfect step with each other and tend to “resonate,” or reinforce each other. Distances between resonance levels are measured in units of wavelengths of green light from a mercury lamp. The wavelength of this light—5,469 angstroms—is known precisely. The output of the apparatus is essentially an interference fringe pattern produced through a photocell. By analyzing this pattern, the experimenters can measure the speed of the microwave signal inside the resonance cavity.

Technology Square's Growth

CONSTRUCTION of a third Technology Square building adjacent to the M.I.T. campus will begin this year. It should be ready for occupancy in 1966, and is expected to increase the number of persons employed there to 2,500.

Technology Square was started as an urban renewal project under the jurisdiction of the Cambridge Redevelopment Authority. It occupies 14 acres where the Rogers Block and a Lever Brothers factory once stood. The Cabot, Cabot & Forbes Company and M.I.T. have jointly sponsored its development. It has brought a Ward Melville Silver Medal for Community Improvement to Cambridge, and recently received an Award of Merit for design from the Federal Urban Renewal Administration.

Two nearly identical, nine-story buildings have been erected, and the third one will be similar. Later, a 20-story tower is to be built. Together, these buildings will provide more than 800,000 square feet of floor space for science-based business, industrial, and professional organizations.

Chairman James R. Killian, Jr., '26, of the M.I.T. Corporation, announced in November that ground would be broken next March for the third building, and observed that: “The attractiveness of Cambridge as a location for business and for industrial research, and the community's recognition of the importance of co-operation among business, civic, and academic groups have created great confidence in the future of Cambridge. It is this confidence which inspires us to take this next step in our plans for the Technology Square complex.”

Apollo Guidance Stations

THE FIRST of a series of field laboratories for checking and servicing the guidance and navigation systems that U.S. astronauts will use to reach the moon was opened last fall in Downey, Calif., on the premises of the Space and Information Systems Division of North American Aviation, Inc. Others are being set up at Bethpage, N.Y., Houston, and Cape Kennedy.

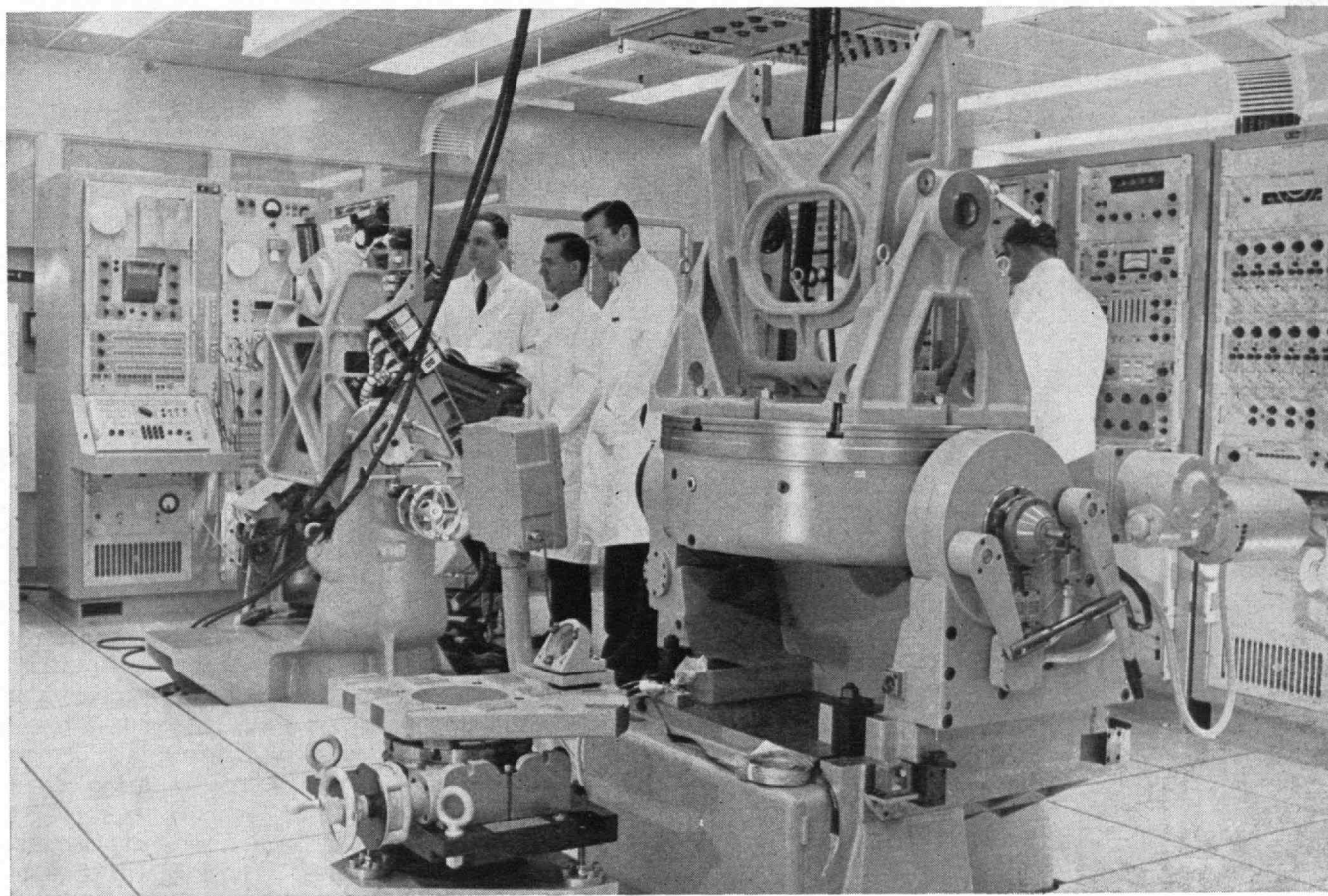
Engineers and technicians from M.I.T. and companies responsible for the Apollo guidance systems will staff these laboratories. By mid-1966, the Downey laboratory will have a staff of about 100, about 5 per cent of whom will be M.I.T. personnel. Sidney Felix is now M.I.T.'s senior representative at Downey.

The Fiesta in Mexico

M.I.T. PROVOST Charles H. Townes and Mrs. Townes will attend this year's fiesta of the M.I.T. Club of Mexico. As a recipient of the 1964 Nobel Prize for Physics, Dr. Townes planned to be in Stockholm in December for the presentation ceremony. In March, he will go to Mexico at the invitation of the Mexican-North American Institute of Cultural Relations, and join other guests from the United States at the fiesta that is being arranged March 11 to 13.



In Technology Square: The buildings at left and right are up; a third one will rise this year, before the tower is built.



In Downey, Calif.: Guidance and navigation systems for the Apollo project are being tested in a new field laboratory.

The New Tools Throughout The Institute

Growing ranks of computers embrace two new machines and their own special jargon

EVER SINCE Vannevar Bush, '16, developed the differential analyzer, computers have figured more and more prominently in the life of Faculty and students at M.I.T. Now the Institute has more than 40 machines of varying sizes, and about 115 consoles are connected via time-sharing systems to large computers at the Computation Center and at Project MAC. The student editors of *Tech Engineering News* devoted most of its November issue to computers and their uses.

Among the Institute's increasing computer facilities, the newest are those pictured here, in the Department of Civil Engineering and at Lincoln Laboratory. An important



This new laboratory will be a focal point for efforts to improve engineering.

aspect of the growing use of computers is that "the computer itself has been de-emphasized and is now properly regarded as nothing more than a tool," according to Professor J. Melvin Biggs, '41, Director of the new Civil Engineering Systems Laboratory that opened this fall. With the help of an IBM 7040, the Faculty and students working in this laboratory will tackle the problem of improving the methods by which an engineer arrives at a design. The next step, Professor Biggs says, is to automate the drafting process that consumes so much of the cost of en-

gineering. For this the laboratory has installed a computer-linked plotter, which is essentially an electromechanical draftsman. The objective, he says, is to evolve a computer language for drafting so that the system can take over the tedious chores of putting specifications into proper visual form.

At Lincoln Laboratory's new Haystack microwave facility, a Univac 490 permits even a relatively unskilled operator to direct the huge 120-foot antenna in a precise manner from a typewriter keyboard. Because of Haystack's narrow beam, even such distant targets as radio stars will pass in and out of the beam in less than 15 seconds. But the sophisticated control system can direct the beam to find and track automatically any one of a large number of targets—including satellites, the moon, planets, and the communications belt of dipoles. While the antenna is tracking one target, an operator may interrogate the computer about other objects whose ephemerides have been stored.

The abundance of computers on campus has created a breed of persons "who speak an unrecognizable patois," *Tech Engineering News* reported. To fathom this jargon, *T.E.N.* presented a "pseudo dictionary" of computer terms, which included such lexical explanations as "Kludge: The only way of doing something—even if it doesn't work well."



With precision control, Haystack can find either a fiber belt or planets in the sky.

A Decisive Decade for Alumni

*The M.I.T. Association can help contribute to
"individual growth and learning at every age"*

By D. P. Severance, '38

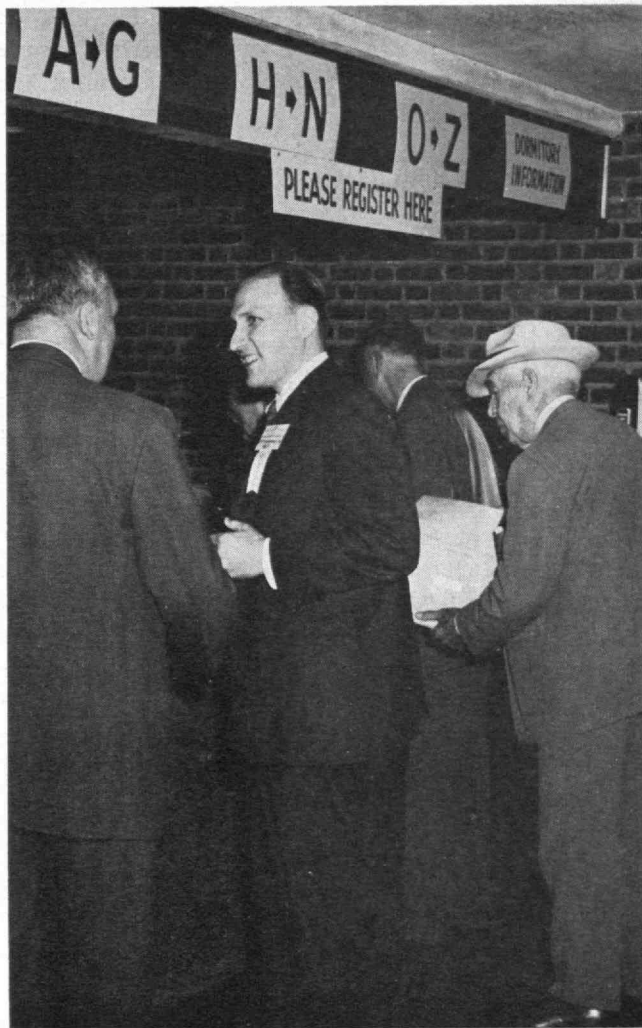
TEN YEARS from now we shall be entering the 100th year of the M.I.T. Alumni Association. Many feel the Association must advance faster in this next 10 years than ever before; that this will be a decisive decade, in which the Association must imaginatively and effectively respond to changing circumstances and to new and demanding needs.

What are these circumstances? The Institute's Alumni will be a younger, more highly educated group of men and women in 1975 than it is now. The age distribution is moving downward, and by then the median age will be about that of members of the class graduated in 1950. The percentage of men seeking advanced degrees is rising, and this tends to lengthen the gap between undergraduate student days and active identification with an alumni program. Sixty per cent of last June's class expected to work for advanced degrees, at M.I.T. or elsewhere.

By 1975, 35 per cent of our degree recipients will have an advanced degree—but not a bachelor's degree—from M.I.T. Their campus life will have been different. Forty-four per cent of our graduate students, and 4 per cent of our undergraduates, are married now before being graduated, and many have children before they leave the campus. Then suburbia, as well as the tendency to marry younger, affects their interests and activities as Alumni.

There will be less distinction in being a college graduate 10 years from now because the number of college students will have doubled by then. Fraternities and sororities, which have helped to bind students to their alma maters heretofore, are literally fighting for their lives now on many campuses. Today's students are more apathetic toward the light and frothy activities of the past, and more serious academically.

Finally, student attitudes toward alumni associations are changing. A recent graduate from Stanford and Rhodes Scholar told a group of alumni workers: "One of the great faults of all associations is the image projected of the alumnus. I think there's too much athletics—not only is this inconsistent with the major goals of any university, but it is increasingly resented by this new breed of collegian. . . . Hit a higher level of sophistication in your bulletins. . . . We're a direct age—we'd rather be asked to show the color of our money right off. Grant recognition to academic accomplish-



MR. SEVERANCE is executive vice-president of the M.I.T. Alumni Association, and is seen above greeting guests at an Alumni Officers' Conference. This article was drawn from his remarks last fall at such a conference.

ments . . . Above all, put some emphasis on alumni who have made outstanding contributions."

Some of these changes in the college scene, however, can help our Association:

► An M.I.T. degree will not be less distinctive just because there is little distinction to some other college degrees. It should become more precious.

► As for fraternities, we are proud of M.I.T.'s. They are in harmony with Institute goals. Our fraternities

have problems, but the M.I.T. Administration is not one of their problems.

► Tech has a history of serious students with less than average interest in being Joe College. It is almost a relief to find other associations wondering how to cope with this problem.

In effect, the Stanford student was pleading for the very type of alumni program which we have been striving to build for years. The next decade may find many more universities trending from the academic side shows toward M.I.T.'s type of alumni relations. If so, our Alumni—whose fund-raising results every year place us among the top half-dozen colleges, whose magazine is outstanding, and whose Educational Council is without peer—no longer need feel inferior because they have no football team and can't remember the words of their school song.

Beyond the Campus

The unbelievable changes being wrought by science and technology in the fabric of all our ways of life pose a greater challenge. The scope and the impact of the flood of information that pours from university and research laboratories is difficult to comprehend: more than 1,250,000 technical papers a year in the fields of the life and physical sciences; the number of technical journals has doubled in the past 13 years from 50,000 to 100,000. By 1980 it is estimated there will be a million such journals.

Thoughtful persons predict that by 2000 A.D. we shall have technical capacity to make starvation obsolete, to lengthen appreciably the span of life, and to change hereditary traits. We shall have limitless abundance of energy sources and raw materials. Educational underdevelopment will be considered as unacceptable as economic underdevelopment. Much of this will be done within the "decisive decade."

The revolution need not be only in science and technology. Another revolution can be under way by 1975. Milton Eisenhower, President of Johns Hopkins, refers to it as the use of science as a social force. He is certain that the growing numbers of scientists and engineers

will devote an increasing part of their time to the management and solution of social problems.

As Dr. Stratton told the Class of 1964 at commencement, the modern university is the only place with the range of interests and a common ground for those who draw upon the arts and humanities as well as upon science and engineering, and the penetration of science and technology into every domain of human affairs has "brought a new order of responsibility for the consequences of progress to our society as a whole. Some of this responsibility falls upon the government, upon industry, and upon the university. But in a free society the burden of obligation rests ultimately upon you as individuals. You are in a superlative position to meet the technical challenges of our day. But you owe something more to the common account. You must be ever mindful of your own deepening responsibility, both to your profession and to society which look to you for positive action."

The Class of 1964 has the knowledge and techniques, but the Classes of 1954, 1944, or 1934 have the experience and the prestige that gets things done. M.I.T. graduates could contribute more to the common account and have a fuller life if something could be done to lengthen their professional usefulness and help them cultivate new interests, new backgrounds, and new involvements.

The Sticky Wicket

Continuing alumni education is not a new topic. Except for fund raising, it is today's most discussed issue in alumni circles. Many universities are devoting money and effort to this problem, but without much progress.

Is this a proper function for M.I.T.? To what extent should M.I.T. commit its limited resources for this? What kind of activities in lifetime learning are feasible and most desirable? I detect a consensus among the Faculty and Alumni with whom I have talked.

Nearly everyone says "yes" in principle when asked if it is a proper function. John W. Gardner, President of the Carnegie Foundation, in his book *Self Renewal* expressed this concisely: "The ultimate goal of the ed-



James R. Killian, Jr., '26, Professor Shapley, and Judge Wyzanski took part in a recent M.I.T. Alumni Seminar.

educational system is to shift to the individual the burden of pursuing his own education. This will not be a widely shared pursuit until we get over our odd conviction that education is what goes on in school buildings and nowhere else." The sad fact is that the learning process is not continuous, not universal, and that it comes to an early and abrupt end for many of us.

For places like M.I.T. there is another reason for continuing contact with the alma mater. Read a few entries at random in the *Alumni Register*. Increasingly, these jobs represent changes wrought by M.I.T. and its recent graduates.

But should M.I.T.'s resources be used for alumni education? This is the sticky wicket! The consensus is that the college has a moral obligation but not a financial obligation. Yet this will take dollars, staff time, and volunteer effort—all presumably diverted from some other cause. The always scarce educational dollars should not be siphoned from M.I.T.'s primary function. The Faculty members are enthusiastic about such programs, but their time is limited. (Actually, in the long run there is an intangible benefit for the university, for as the prestige of a university is reflected by the price and respect paid to alumni, so, too, the success and commitment of alumni reflect favorably on the alma mater.)

Unique Contributions

There are some Alumni, however, who adamantly oppose the Association's concern for what they call "adult education." I believe their principal concern is that this diverts attention that should be given to the continuations of friendships and social contacts. This could be a drawback. I doubt that it need be. Many thoughtful Alumni just as firmly believe that more substantive contacts with the Institute will enhance the social pleasures, whereas the reverse is unlikely. Personally, I favor the concept that Dr. Bush voiced at our Alumni Officers' Conference two years ago, "We gather because we enjoy the association with successful fellows in a common cause."

We must not try to compete with the professional

societies. M.I.T. men keep abreast of their areas of specialization through professional societies, academic programs, and vast amounts of outside reading. It is said that "chance favors the prepared mind." Can the Association help you keep abreast of changes in other fields, new fields, related fields, fields that might prove important to you later—the gleanings from those 100,000 scientific journals?

Also there's the question of whose opinion men value on controversial issues. Friends in your community expect you to have insight on many issues just because you are an M.I.T. man. Would you look to meetings and publications of your Association for a sifting of the pros and cons?

There is a third area in which the Association might be helpful—that of general and liberal education. Many former students have had vistas in the humanities opened for them after graduation, by M.I.T. speakers and book lists, for example.

Commencement speakers tell us that education is a lifelong process. Unfortunately, this concept finds little reflection in our social institutions in spite of years of lip service. The responsibility rests with the individual. But, as Dr. Gardner suggests, we should "accept as an all-encompassing goal the furtherance of individual growth and learning at every age. . . . Every institution in our society should contribute to the fulfillment of the individual."

I believe we have reached that time when universities and their associations will accept Dr. Gardner's admonition. The potential waste of college graduates is of such massive scale that sensible people can no longer believe we can afford it.

All over the country M.I.T. club officers and Alumni generally are showing a very real interest in having substantive programs—a thirst far greater than a decade ago. This is in line with our years of effort to remove some of the strangeness from the exciting new things going on in science and technology and to emphasize the social impact of new developments. The critical fields are ours. If we at M.I.T. take this tide now at its flood, we stand to lead a new alumni movement.



Professors Bloomfield and Smith flanked Vannevar Bush, '16, during a panel discussion of "Man's New Responsibilities."

Institute Yesteryears

As recalled by the late H. E. Lobdell, '17



25 Years Ago

"PANTOPHAGOUS as ever, the Bureau of Alimentary and Potatory Studies, which is an active adjunct of *The Review*," wrote the editor in January, 1940, "has conducted an investigation lately into the gustatory qualities of that already widely publicized pemmican upon which Admiral Byrd's hardy explorers will batten while on the trail, and which was developed by *Robert S. Harris*, '28, Assistant Professor of Biochemistry of Nutrition, Department of Biology and Public Health, who is serving as nutritional adviser to the expedition.

"The BAPS findings checked well with blindfold tests carried out by members of the expedition who selected it as the most pleasing among a group of samples of different kinds of pemmican used by previous expeditions from this and other countries. BAPS reports the aroma as being reminiscent of well-roasted beef that has reposed in the icebox overnight, and the taste as recalling that of a rather rich gravy. In texture the Harris pemmican, heated as a gruel—as it is to be used—is thickish and, in a word, chewy; the investigator judged that it would stick well to the ribs. Professor Harris prepared this pemmican for use as the main food for sledge parties on the trail. . . .

"Because it packs 173 calories into an ounce, and because it is precooked, the new blend possesses important advantages over earlier pemmicans. The high caloric value lightens the sledge load and makes it easier for man to consume his full food requirements. Precooking saves precious time and fuel in the preparation of the food."

50 Years Ago

ON JANUARY 1, 1915, *Henry J. Horn*, '88, took office as the 22d President of the Alumni Association, with *John L. Mauran*, '89, as Vice-president. *Walter Humphreys*,

'97, was re-elected Secretary-Treasurer, in which portfolio he served the Association until 1923.

► On January 9, at the Hotel Somerset, there took place the 40th annual banquet of the Alumni Association. As noted by *The Review*: "There were about 500 present, and all the classes were represented excepting '69, of which there are but few members."

In his address, President *Richard C. MacLaurin* noted that: "Just a year ago today a great stride was taken in the right direction by the agreement between Harvard and Technology that has been discussed so much within the last 12 months. It is an agreement honorable to both and advantageous to both. President Lowell has wisely said that we need not discuss which party to the agreement gets the greater advantage so long as the community benefits. This is profoundly true, but nonetheless it is true, in my judgment, that both institutions greatly gain."

75 Years Ago

"A LARGE NUMBER of students have followed the fashion set for them by the instructors, and adopted the latest craze from abroad," declared the editor of *The Tech*. "It gave them a chance to take the desired Christmas vacation which was denied by the Faculty, and in some cases to add a week, more or less, to it.

"One would think that the Institute, of all places in the world, would be passed by this Influenza Fiend; but he has proved himself no respecter of persons, no matter how busy they are, and when his clammy fingers close over a man's hand, the grip is severe."

► Two other events of January, 1890, were recorded by *The Tech* as follows:

"The Class of '92 has the good fortune to be successful in nearly ev-

erything it undertakes and the annual dinner of the Class Society was no exception. There were between 40 and 50 present, and the principal business of the evening was enthusiastically attended to. A year and a half of boarding-house practice turned out skilled eaters if not epicures. . . .

"The semi-annual exhibition drill of the Corps of Cadets was held at Winslow's Rink, January 11. The battalion under the command of Major Guppy went through the usual skillful maneuvers which were received with the usual applause. . . . Some would-be humorist, however, amused himself by scattering red pepper around the sides of the hall, to the serious annoyance of the spectators."

100 Years Ago

IN JANUARY, 1865, announcement of the "Preliminary Course of Instruction in the School of Industrial Science" was made public through advertisements in the Boston newspapers. One such advertisement, signed "*William B. Rogers*, Pres., Mass. Inst. Tech." read as follows:

"In anticipation of the permanent organization of the School, and in order to facilitate the progress of students, who may wish to qualify themselves more completely for the regular course, as well as to save the time of such as may wish to enter in advance of the second year's studies, it is proposed to open, on MONDAY, the 20th of February, in the rooms of the Institute, 16 Summer Street, classes in the following subjects:

"Mathematics, with practice in Geometrical Drawing, and Shading in India Ink; Lessons in Descriptive Geometry, illustrated by a suite of models in relief.

"Physics, including elementary doctrine of Forces, and Mechanical Properties of Solids and Fluids, accompanied by Manipulations.

"Chemistry of the Inorganic Elements, with Manipulations.

"Practice in the use of the Plane Table, Level, and Geodesic Circle.

"Free Hand Sketching.

"The French Language.

"The preliminary course will cover a period of four months. Persons proposing to enter at this time should make known their intention as soon as possible."

Round Hill Estate To Become a Retreat

*M.I.T. sells the scene of historic research
and the great antennas there will come down*

M.I.T. has sold the Round Hill Field Station in South Dartmouth, Mass., to the Society of Jesus of New England for use as a retreat for men of all ages. Once the summer estate of the late Colonel E. H. R. Green, son of Mrs. Hetty Green, this 277-acre property on the edge of Buzzards Bay was given to M.I.T. in 1948 by the late Mrs. Matthew Astor Wilks, Colonel Green's sister.

"Because of the ever-changing course of scientific research it became apparent that M.I.T. had no further need for Round Hill," Joseph J. Snyder, '44, Treasurer of the Institute, said in announcing the sale. "The cost of maintaining a little-used facility of this size could not be justified in view of the pressing needs of the educational program of the Institute in Cambridge." With the co-operation of the Jesuits, researchers now at Round Hill will remain there temporarily and M.I.T. will remove several large antennas that were built for radio research.

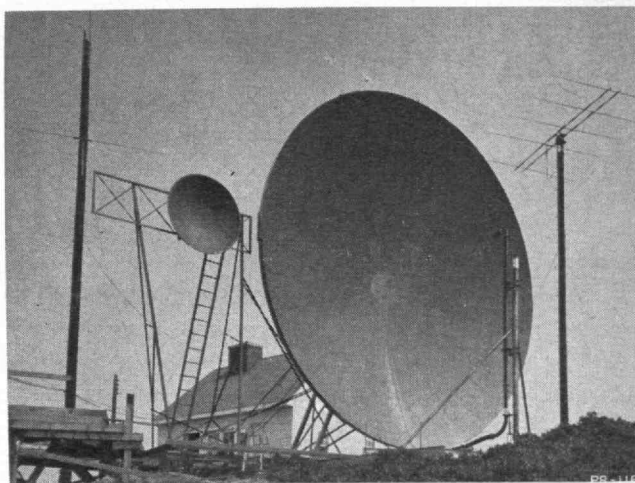
Colonel Green first made his estate available for M.I.T.'s use in 1925. High-frequency radio was just coming into use, and atmospheric phenomena had been found to affect waves of some frequencies more than others. Early research was directed toward understanding these effects. Professors Edward L. Bowles, '22, now retired, Julius A. Stratton, '23, now President of M.I.T., and Henry G. Houghton, '27, now Head of the Department of Meteorology, directed work at the Round Hill Field Station.

M.I.T. engineers used a radio station built by Colonel Green to communicate with the Byrd Antarctic Expedition. In 1928, while building a private airport, Colonel Green became interested in the problems of landing airplanes in fog, and M.I.T. engineers demonstrated the "equisignal" method of creating a landing path marked by radio waves down which a plane could fly. Studies of fog led to the first devices for measuring the water particles and amount of water suspended in fog, and a paper published in 1930 became the primary guide to the effect of rain and fog on centimeter radio waves—research which was of great importance in the later development of radar.

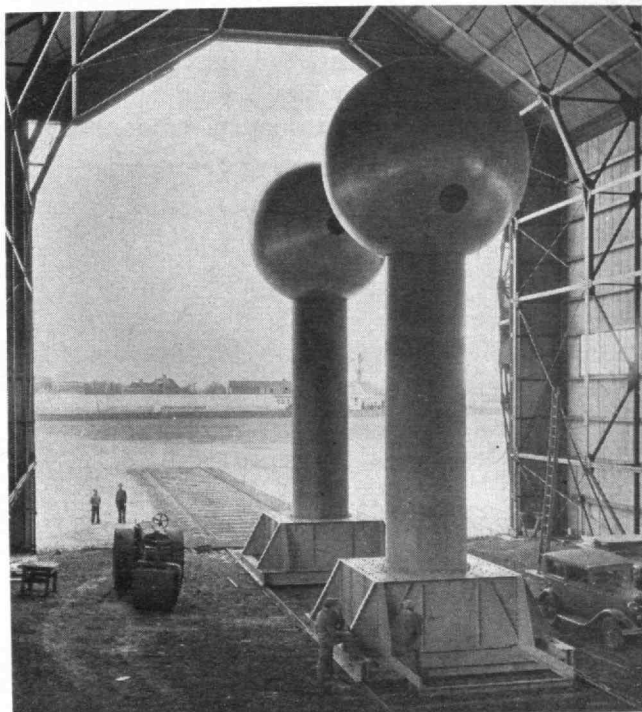
(Concluded on page 43)



Knowledge of many matters grew on Round Hill's 277 acres during the years that M.I.T. used it as a field station.



These antennas brought TV over the horizon, and Van de Graaff's generator (below) was in a dirigible hangar.



The Scientific Scene As Seen on Broadway

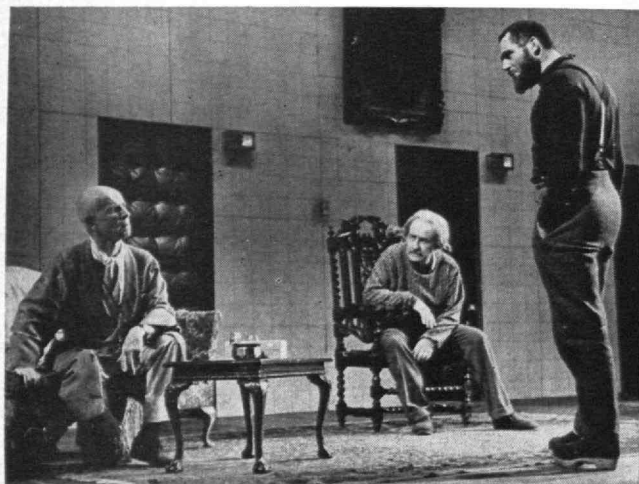
A Report from Stan Klein, '58

Editor, "Engineer," an Engineers Joint Council Publication

BBROADWAY this season has exploited the rich drama and controversy that characterizes much of modern science and technology. Two plays—*The Absence of a Cello* and *The Physicists*—are not only enjoyable theater per se, they also present philosophical questions that beset sensitive and deep-thinking scientists. The plays represent rare mergers of the "two cultures."

The Physicists, written by the European playwright, Friedrich Dürrenmatt, is the more serious of the two. Through the bizarre behavior and conversations of three physicists in a mental asylum, it probes the question: Should a scientist continue to penetrate the secrets of the natural order knowing that men will misuse his discoveries? Or, being a professional, should he persevere in unraveling the unknown? These are incredible questions for a Broadway theater to confront its audience with and expect to make money. (*The Physicists* ended its Broadway run on November 28.) Here is a sample of the dialogue:

"It's nothing more nor less than a question of the freedom of scientific knowledge. It doesn't matter who guarantees that freedom. I give my service to any system, providing that system leaves me alone. I know there's a lot of talk nowadays about physicists' moral responsibilities. We suddenly find ourselves confronted with our own fears and we have a fit of morality. This is nonsense. We have far-reaching, pioneering work to



Physicists Hume Cronyn, George Voskovec, and Robert Shaw.

do and that's all that should concern us. Whether or not humanity has the wit to follow the new trails we are blazing is its own lookout, not ours."

And then another viewpoint:

"There are certain risks that one may not take: the destruction of humanity is one. We know what the world has done with the weapons it already possesses: we can imagine what it would do with those that my researches make possible . . . our knowledge has become a frightening burden. Our researches are perilous, our discoveries are lethal. For us physicists there is nothing left but to surrender to reality. It has not kept up with us . . . We have to take back our knowledge . . ."

Unlike *The Physicists'* dead seriousness, *The Absence of a Cello*, written by Ira Wallach, is a zestful comedy. Its audiences at the Ambassador theater are treated to a delightful blend of scientific philosophy and belly-splitting humor. The play pits Professor Andrew Pilgrim, specialist in ultrasonic research, against Otis Clifton, personnel recruiter for the "Baldwin-Nelson" Company which is pioneering the development of ultrasonic home appliances.

Otis interviews Professor Pilgrim at his home to determine whether the scientist and his family will be able to adjust to the corporate environment. "I wouldn't want you to think that Baldwin-Nelson doesn't welcome the questioning mind," Otis tells the Professor, it's just that "the questioning mind must also ask the same questions we ask."

To land the lucrative job made necessary by large debts, the Professor is instructed by a Wharton Business School graduate to fabricate a "personality profile" supposedly appropriate to the corporate laboratory. What makes for the merriment and the telling insights, of course, are the Professor's affectations in attempting to cover up his eccentricities and his wife's exotic interests. The "organization man," usually mocked by creative writers, receives a rare tribute when Otis tells the Professor that he has not been hired: "It wasn't your books that lost you the job . . . It was your need to rise to their defense." The play, by the way, does not end here, but with a surprise twist that research consultants particularly will enjoy.

Both plays also contain references to specific scientific concepts and terms, imagined and actual. "That's a probability function . . ." Professor Pilgrim explains to Otis during the interview, . . . and that's a frequency function . . . If you note this function—I'm talking about g-bracket-n-close bracket—this function chooses the correct interval. And this function chooses the correct number within the interval . . . While most are preposterous from a technical point of view, they should amuse the scientist and engineer. More important, they represent another artistic technique for presenting science and technology to laymen.

Broadway should be heralded for these ventures.

*The two passages are from the Grove Press edition, James Kirkup, translator.

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| 1910 Developed rubber auto ignition cable molded under high pressure in 4-foot molds; 1915 in 50-foot molds; 1921 in 100-foot steel molds. | 1950 Design and manufacture of special cable for aircraft radar scanning reflectors. |
| 1912 Use of rubber insulation for better grade of auto "primary" wiring. | 1951 Design and manufacture of improved electrical shielding for cables. |
| 1915 First manufacture of primary wire "harnesses" for autos. | 1952 Low noise Miniature Coaxial Instrument Cables. |
| 1917 Producer of Field Telephone Wire, World War I. | 1953 Improved High Temperature, Light Weight Control and Instrument Wire for missiles. |
| 1921 Introduction of plain rubber acid resisting battery cable for autos. | 1956 1000°F Inorganic Insulated Cables using pure mica, free from organic resin binders. |
| 1930 Improved Aircraft Lighting and Power Cable using high-grade rubber insulation and flame resisting lacquer. | 1957 1000°F Coaxial Cables with inorganic low loss insulations. |
| 1931 Development and manufacture of special armored shielded conduit for aircraft engine ignition. | 1958 Completely water-sealed Transducer Cables to withstand pressures at depths of 20,000 feet. |
| 1932 Designed and manufactured custom-made aluminum sheathed aircraft cable for dirigibles. | 1959 Extra High Voltage Cable made with laminated synthetic polymer films and high dielectric strength oil. |
| 1938 Development and manufacture of beaded type coaxial cables from Italian patents. | 1960 All Silicone Multiconductor Cables with colored striped insulations and oil-resistant jacket. |
| 1940 Initiated use of neoprene, originally "Duprene" rubber, as insulating compound. | 1961 Radiation and heat-resistant closed circuit TV Cables for monitoring in Reactor Buildings and Hanford Works. |
| 1942 Special Multiconductor Cables for bomber turrets. | 1962 First assembly of Television Camera Cable with connectors specially designed for television studio application. |
| 1943 Design, patent and manufacture of filamented type coaxial cables. | 1963 Missile Launcher Cables jacketed to resist liquid fuels of UDMH and N ₂ O ₄ . |
| 1944 Design and manufacture of special gunfire control cable for aircraft. | 1964 1500°F-2000°F insulations to retain electrical capability in direct flame. |

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New Books

LIMITED WAR AND AMERICAN DEFENSE POLICY, by Seymour J. Deitchman, Special Assistant in the Office of the Secretary of Defense (*The M.I.T. Press*, \$10).

Reviewed by Major Paul L. Gurnee, Associate Professor of Military Science at M.I.T.

IN DESCRIBING the purpose of his book, the author states: "I am concerned with the job to be done, how it gets done, but not with who does it. I have therefore ignored, to the extent that I could, the roles and missions questions, accepting the current Service assignments as satisfactory."

Mr. Deitchman's definition of limited war is quite inclusive, embracing "all military action that does not threaten the immediate destruction of the United States and NATO powers, on the one hand, and the Soviet Union (including its Eastern European Empire) and Communist China on the other."

In his development of limited-war theory through an analysis of the period 1945-1962, three classes of military engagements are identified: conventional war (not involving the nations listed above), unconventional war, and deterred war. Prerequisites for the successful prosecution of each class of conflict are developed by discussions of representative type conflicts.

Having developed a limited-war thesis, the author next discusses the environment in which engagements of the future will be fought. The geographic environment and attendant problems of climate are covered along with descriptions of the various battlefield conditions one would find in nuclear, conventional, and guerrilla war. In addition, the organization, modes of operation, and equipment of the forces presently available for limited war are outlined. The data are then translated into a limited-war matrix representing the

range of enemy capabilities (modern-nuclear, semi-modern, primitive), and the physical environmental range as measured in terms of ease of surface and cross country movement (excellent, possible, and difficult).

The above criteria are developed to assist the policymaker in resource allocation and force structure planning. Among the knotty problems presented are the value of battlefield ballistic missiles versus tactical air power, composition of tactical air forces, and battlefield mobility (by air or by ground). These problems are dissected on individual merit, separate from partisan viewpoints.

The concluding portion of the book deals with special problems of unconventional warfare. The need for more trained career personnel is stressed and a suggestion made for recruiting experts in anthropology and languages, and others with experience in the undeveloped areas, to assist in formulating unconventional warfare counter programs.

Have You Seen These?

RECENT publications likely to be of especial interest to many M.I.T. Alumni have included:

Electrons and Waves, an introduction to electronics and communication, by John R. Pierce; the latest addition to the Science Study Series for high school students (an Anchor paperback, Doubleday & Company, Inc., \$1.25).

An Integrated Theory of Linguistic Descriptions, by Jerrold J. Katz and Paul M. Postal, Assistant Professors at M.I.T. and research associates in the Research Laboratory of Electronics (a research monograph, The M.I.T. Press, \$5).

The Natural Radiation Environment, a Rice University semicentennial publication, edited by John A. S. Adams and Wayne M. Lowder, dedicated "to our children whose future welfare is becoming more and more dependent upon our understanding stewardship of the environment," and including contributions by Allan B. Tanner, '52, Gerald L. Schroeder, '59, Bernd Kahn, '60, Morris H. Shamos, '42, and Gunter H. R. Kegel, '61 (University of Chicago Press, \$15).

Sports Events in January

The M.I.T. Athletic Department has the following events scheduled (numerals designate day of month):

Rifle—Northeastern, away, 15; Dartmouth, home, 23.

Indoor Track—Knights of Columbus Relays, Boston Garden, 9; Columbia, home, 16; Boston AA Relays, Boston Garden, 23.

Wrestling—Massachusetts, away, 9; Connecticut, home, 12; Wesleyan, home, 16.

Squash—Wesleyan, away, 9; Princeton, away, 15; Navy, away, 16.

Swimming—Williams, home, 9; Coast Guard, home, 14.

Basketball—Colby, home, 8; Bowdoin, away, 9; Tufts, away, 11; Lowell, home, 12; Iceland, home, 16.

Hockey—Connecticut, away, 9; Vermont, home, 13; W.P.I., home, 16; Amherst, home, 19.



Photo by John Torode, '66

AN AMOEBA RACE was run at M.I.T.'s Field Day last fall. Each amoeba had 26 men taped together as ectoplasm around 70 some others. Sophmores won, but were penalized for infiltrating the freshman amoeba.



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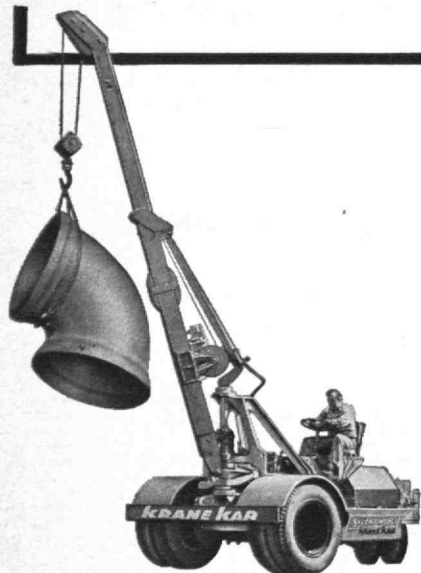
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Individuals Noteworthy (Continued from page 4)

Science Teaching Head

ROBERT I. HULSIZER, JR., who received his doctorate at M.I.T. in 1948, has been appointed professor of physics and director of the Science Teaching Center at the Institute. In the latter position, he succeeds Professor Jerrold R. Zacharias, who has been in charge of the center since the death of Professor Francis L. Friedman, '49.



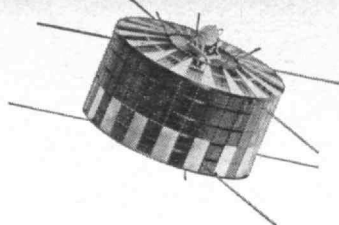
Robert I. Hulsizer, Jr., '48

As a member of the University of Illinois faculty for many years, Dr. Hulsizer has been active in efforts to improve physics instruction in the secondary schools and universities.

He is a Bates College graduate, with a master's degree from Wesleyan University, and worked for four years in the Radiation Laboratory at M.I.T. He then spent the next three years in the Laboratory for Nuclear Science, participating in cosmic radiation studies under Professor Bruno Rossi.

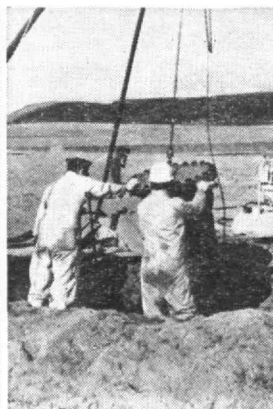
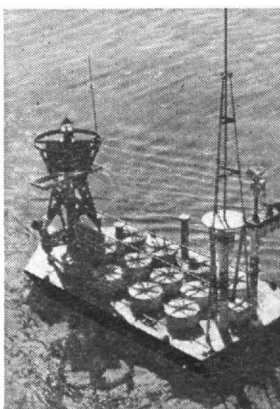
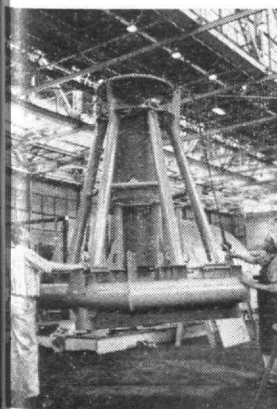
At the University of Illinois, he has contributed to physics research in a variety of ways, particularly in the study of elementary particles. As a member of the Control Systems Laboratory there, he helped develop a model air defense system based upon the use of computers. Since 1960, he has collaborated with Luis W. Alvarez of the University of California (Berkeley) on the development of a method of analyzing bubble chamber photographs in which several scanning and measuring projectors are connected to a digital computer.

(Continued on page 34)



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Individuals Noteworthy

(Continued from page 32)

In Alumni Fund Post

T. GUY SPENCER, '56, has been appointed to the staff of the M.I.T. Alumni Association. As Assistant Director of the Alumni Fund, he will work with Douglas F. G. Haven, '52, on regional solicitation.



T. Guy Spencer, '56

Mr. Spencer joined the Fort Worth, Texas, division of General Dynamics Corporation after being graduated from the Institute and since 1960 has been a contracts administrator for the firm. In Fort Worth he has been president of the M.I.T. Alumni Club and a founder and officer of St. Giles Presbyterian Church. He is a native of Oklahoma City, and attended Westminster College, in Fulton, Mo., before enrolling at M.I.T., where he majored in business and engineering administration.

New Posts

NAMED in the news of promotions, elections, and appointments recently were:

Homer N. Calver, '14, as Public Health Consultant, Population Policy Panel, the Hugh Moore Fund . . . *Edwin M. Goldsmith, Jr.*, '23, as Vice-president—Engineering, The Thomas Holmes Corporation . . . *John J. Hartz*, '28, as Director of Tire Development, The Goodyear Tire and Rubber Company;

Vincent F. Gardner, '29, as President, the American Society for Hospital Engineers . . . *David Rubinstein*, '29, as Director of Chemical Research, International Shoe Machine Corporation . . . *Bernard B. Berger*, '35, as Director, Northeastern Water Laboratory, U.S. Public Health Service;

Pyam W. Williams, '36, as Vice-president—Engineering and Research, Robertson Paper Box Company, Inc. . . . *Manning C. Morrill*, '39, and *Charles H. Ehlers*, '52, respectively, as President, Cryovac Division, and as Manager—Cambridge Plant, Dewey and Almy Chemical Division, W. R. Grace and Company . . . *Isaac B. Venable, Jr.*, '39, as a Director, Rio Tinto Dow Limited;

Edmond P. DiGiannantonio, '40, as Director of Marketing—Anti-Submarine Warfare and Oceanography, Defense Systems Division, The Bunker-Ramo Corporation . . . *Martin Mann*, '41, as President, National Association of Science Writers . . . *C. Reginald Robba*, '44, as Vice-President, Booz, Allen and Hamilton Inc.;

Allen J. Vander Weyden, Jr., '44, as Deputy Assistant General Mana-

ger for Reactors, Atomic Energy Commission . . . *Robert L. Stern*, '48, as Chief, Office of Industrial Services, National Bureau of Standards, U.S. Department of Commerce . . . *Charles D. Spencer*, '50, as Supervisor, Process Development, Cast Nylon Products, The Budd Company;

David A. Hill, '54, as Chief Physicist, West Orange Laboratory, Vitro Corporation of America . . . *J. David Hobbs*, '54, as Vice-president—Research and Engineering, Comtek, Inc. . . . *Donald A. Gall*, '58, as Assistant Professor of Mechanical Engineering, Carnegie Institute of Technology . . . *Bernd Kahn*, '60, as Chief, Radiological Health Research Activities, Robert A. Taft Sanitary Engineering Center, the U.S. Public Health Service.

Management Professors

LEON S. WHITE and *David P. Taylor* have joined the Faculty of the Alfred P. Sloan School of Management as assistant professors of management.

Dr. White was born in Germany and became a naturalized U.S. citizen in 1944. He has degrees from Stanford and Columbia Universities and has been an associate in industrial engineering at the latter for the last two years. His specialty is operations research.

Professor Taylor has degrees from Cornell University and the University of Chicago, and has been a research associate in the Department of Economics at the latter for the last two years. He has specialized in industrial relations and labor economics.

(Continued on page 36)



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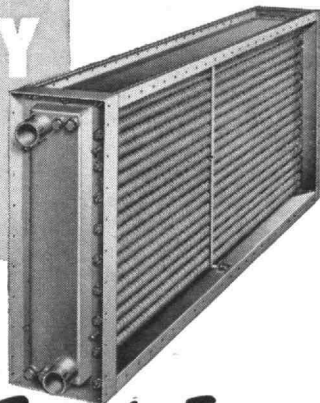
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Individuals Noteworthy

(Continued from page 34)

Honors to Alumni

RECIPIENTS of recent awards and similar distinctions have included:

Laurence B. Davis, '22, the Order of the Sacred Treasure by Emperor Hirohito, Japan . . . *C. Stark Draper*, '26, and *Robert B. Woodward*, '36, the National Medal of Science by President Lyndon B. Johnson . . . *Sydney D. Berman*, '27, the Exceptional Civilian Service Award by the U.S. Air Force;

Franklin K. Pittman, '41, the Distinguished Service Award by the Atomic Energy Commission . . . *Benjamin Lax*, '49, a citation for distinguished achievement by the Cooper Union for the Advancement of Science and Art . . . *S. Parker Gay, Jr.*, '52, an award for the best paper published in 1963 by the Society of Exploration Geophysicists;

Captain John C. Frishett, '56, the Commendation Medal by the U.S. Air Force, Space Systems Division . . . *F. Christopher Tahk*, '61, the Eastman Kodak award for research by the University of Rochester.

Professor of Metallurgy

JOHN W. CAHN has been appointed professor of metallurgy at M.I.T.

Born in Cologne in 1928, Dr. Cahn came to the United States in 1939 and was naturalized in 1945. He received the B.S. in chemistry from the University of Michigan, and his Ph.D degree at the University of California (Berkeley), where he was a teaching assistant from 1949 to 1952. For the next two years, he was an instructor at the Institute for the Study of Metals at the University of Chicago. Since 1954 he has been on the staff of the General Electric Research Laboratory in Schenectady.

In 1960 Dr. Cahn was a Guggenheim Fellow at Cambridge University in England, and in 1963 he was a summer consultant at the Lawrence Radiation Laboratory in Livermore, Calif. He was chairman of the Gordon Conference on Physical Metallurgy of the American Association for the Advancement of Science (1963-1964) and has been a member of the panel on Perspectives in Materials Research of the National Academy of Sciences.

Dr. Cahn is the author of 34 publications in the open literature and several more in press.

Engineering Professors

RONALD C. HIRSCHFELD has become an associate professor in the M.I.T. Department of Civil Engineering, and *Jose M. Roeset*, '64, and *Peter J. Pahl*, '63, have been named assistant professors.

Dr. Hirschfeld is a Union College graduate with a doctorate from Harvard, where he has been an instructor and assistant professor. He was at the Universities of California and Illinois for a sabbatical year before coming to M.I.T.

Dr. Roeset was born and educated in Spain. He was an engineer with the Agroman Empresa Constructora, S.A., before coming to M.I.T. for his doctorate. He has specialized in structures.

Dr. Pahl, a German citizen, was educated at the University of Stellenbosch (South Africa), and has participated at M.I.T. in studies involving physical models for structural analysis and the interaction between civil engineering and architecture.

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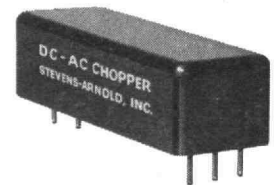
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Naval Professor

CAPTAIN Patrick Leehey has become an associate professor in the Departments of Naval Architecture and Marine Engineering and of Mechanical Engineering.

A 1942 U.S. Naval Academy graduate, who has a doctorate in applied mathematics from Brown University, Captain Leehey is an authority on ship noise analysis and suppression. He has been design superintendent of the Puget Sound Naval Shipyard; head of the ship-silencing branch, Bureau of Ships, and head of the acoustics and vibration laboratory, David Taylor Model Basin. He also has taught at Catholic University, American University, and the University of Maryland and has been a regular contributor to professional journals. In 1963 he received the Gold Medal of the American Society of Naval Engineers for his work in noise control.

Secretary for Corporations

C. WARREN SMALZEL, '45, has been appointed Institute secretary for corporations to strengthen M.I.T.'s over-all relationships with industry. He will have responsibility for soliciting gifts and grants from corporations and corporate foundations.

Mr. Smalzel was graduated from the U.S. Naval Academy in 1940 and received his master's degree at M.I.T. He headed the Applied Sciences Division in Washington for the Bureau of Ships during his Navy service, was formerly executive vice-president of Cabot, Cabot & Forbes Associates, and more recently has been general manager of Mill Accessories, Inc., in New Haven.

Named in News Releases

MRS. IRMA JOHNSON of the Charles Hayden Memorial Library was one of six delegates from the Special Library Association designated to visit the U.S.S.R. under a scientific and technical exchange program.

Irving Kaplan, Professor of Nuclear Engineering, has been working with Harvard Project Physics, a group planning a new kind of high school physics course.

Murray Eden, Professor of Electrical Engineering, and Paul Mermelstein, '60, were scheduled to discuss automatic recognition of handwriting at the 1964 Fall Joint Computer Conference in San Francisco.

New Metallurgy Books for Your Reference Bookshelf

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PHASE EQUILIBRIA AMONG OXIDES IN STEELMAKING

By ARWULF MUAN AND ELBURT F. OSBORN, *The Pennsylvania State University*
Principally concerned with high-temperature equilibrium problems, this book is designed for those metallurgical and ceramic engineers who must predict and explain reactions among oxide phases in steelmaking operations and who wish to apply the latest available phase equilibrium data to the fullest extent. Includes a large number of phase equilibrium diagrams for binary, ternary, and quaternary oxide systems.
c. 288 pp, illus (1964) About \$17.00

DISLOCATIONS

By JACQUES FRIEDEL, *Paris School of Mines*
Presents an up-to-date analysis of the concept and properties of dislocations. Based on the well-known French edition, revisions and additions have almost doubled the size of the book.
604 pp, 206 illus (1964) \$17.00

ELEMENTS OF MATERIALS SCIENCE, Second Edition

By LAWRENCE H. VAN VLACK, *The University of Michigan*
This new edition of a well-known introductory materials science text reflects recent developments in this field. The book provides a basic understanding of the structure of materials and their service behaviors under varying conditions. The emphasis is thus on the principles that govern properties rather than on the properties themselves.
445 pp, 436 illus. Second Edition (1964) \$11.50

SOLID STATE PHYSICS FOR METALLURGISTS

By RICHARD J. WEISS, *Army Materials Research Agency*
This book describes the various measurements performed by physicists on metals and alloys. Provides a conceptual understanding of the physicist's theoretical and experimental approach in solving the electron structure of metals and alloys.
410 pp, 136 illus (1963) \$12.50

HEAT TREATMENT OF METALS


By D. M. DOVEY, E. R. GADD, E. MITCHELL AND W. S. OWEN, *British Institution of Metallurgists*
This book is comprised of four papers which were presented at the 16th Annual Refresher Course of the Institution of Metallurgists in Great Britain. The book surveys the present state of knowledge of heat treatment of metals and attempts to reconcile the metallurgists' approach with that of the shop worker.
155 pp, 114 illus (1963) \$5.00

SURFACE PHENOMENA IN METALS AND ALLOYS

By V. K. SEMENCHENKO
This book brings to the English-speaking world of science for the first time the results of important Russian research. Among the topics covered are surface tension of pure metals, the thermodynamics of surface phenomena in two-component solutions, and the modification of metals and alloys by minor impurities as a surface phenomenon.
466 pp, 144 illus (1962) \$14.75

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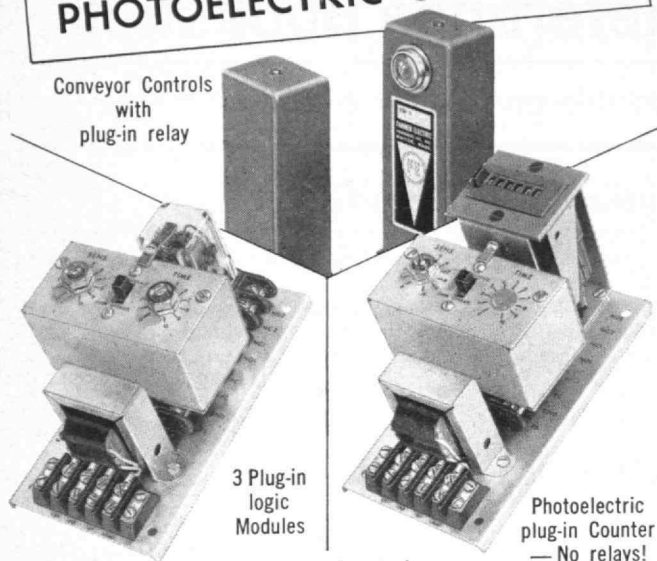
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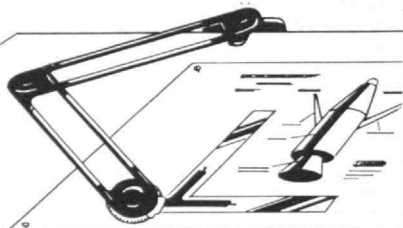
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Trend of Affairs

(Continued from page 21)

The Treasurer's Report

THE ANNUAL REPORT of Joseph J. Snyder, '44, Vice-president and Treasurer, included the operations of the Institute in 1963-1964 showing educational and general expenses of \$32,026,000, with direct expenses of general departmental and interdepartmental sponsored research at \$32,288,000, and direct expenses of major laboratories and special departmental research of \$84,793,000. There was a marked increase in the operations of newly established interdepartmental laboratories during the fiscal year. The increase in the operations of the Instrumentation Laboratory was a principal factor in the growth of the operations of the major laboratories.

Gifts in 1963-1964 of \$20,221,000 included contributions received for the Second Century Fund of \$9,366,000. The endowment and other funds of the Institute increased from \$150,008,000 to \$173,909,000 during the fiscal year.

Educational plant increased from \$59,334,000 to \$72,906,000 in 1963-1964 reflecting the construction program in progress. Major additions to plant facilities during the year were financed from resources provided by the federal government and matched in some measure by funds provided to the Institute from private sources.

The general investments and separately invested funds of the Institute on June 30, 1964, were \$168,993,000 at book value and \$265,392,000 at market value.

Through June 30, 1964, nearly three-fourths of the gifts related to the Second Century Fund had been received in the form of securities, cash, or other property, and these assets make up an important part of the total resources of the Institute. During the years immediately ahead, some substantial assets held on June 30, 1964, as investments will be expended for plant facilities and for the support of the academic departments.

Blood for Hemophiliacs

DEAN Frederick G. Fassett, Jr., called the 1963 blood drive at M.I.T. for the New England Hemophilia Association "the biggest service project ever undertaken by the Interfraternity Conference." This year many more students under 21 obtained parental permission to participate, and Chairman James L. Sweeney, '66, announced that the Interfraternity Conference would sponsor such a drive annually.

The idea came to Lansing Hatfield, '64, and others when they went to Boston City Hospital to pay for transfusions for a man who had worked more than 30 years for their fraternity. They organized a drive which brought out 240 student donors, 60 per cent of whom also participated later in a Red Cross drive.

(Concluded on page 40)

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Dr. Bush's Free-Piston Pump

FREE-PISTON engines have some advantages over other types of internal combustion engines and have intrigued engineers for a long time. Recently, Vannevar Bush, '16, Honorary Chairman of the M.I.T. Corporation, received a patent on a free-piston hydraulic pump that could be used to power automobiles, among other things. His work involves simplifying and increasing the efficiency of the device.

Essentially such engines consist of two opposed "slugs" or pistons that slide freely in a cylinder. As the pistons come together they compress and ignite a fuel, the explosion driving them apart. At the ends of the cylinder the pistons bounce back on cushions of air and the Diesel cycle is repeated. The hot gases at temperatures up to 2,800 degrees F. can be piped off to drive a turbine. In the present case, a hydraulic pump is driven by a shaft connected to a piston.

Fuel consumption of free-piston engines is relatively low, says Dr. Bush, and they will run on Diesel oil and other conventional fuels—as well as on some unusual ones, such as vegetable and whale oils. These engines have compression ratios of about 50:1 as compared to 10:1 in conventional automobile engines, and have no crankshafts or rods and therefore almost no vibration. And they show good acceleration and low-load efficiency.

Although such engines have been used widely in Europe and as experimental power plants for autos and tractors in this country, they have been needlessly complicated, Dr. Bush feels. His design approaches the ideal free-piston engine in that it has two simple cylinders of a single diameter, whereas other models have double pistons of different diameters. Dr. Bush keeps the pistons synchronous by a fluid mechanical feedback system rather than by solid mechanical couplings, and provides air bearings to replace conventional lubrication of pistons.

A hydraulic system powered by a free-piston compressor might be used to drive and brake automobile wheels separately, Dr. Bush says, but he expects that first application of his design may be in Europe, where such devices are now accepted.

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By **John M. Biggs**, Massachusetts Institute of Technology. 375 pages, \$11.50.

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COSMIC RAYS

By **Bruno Rossi**, Massachusetts Institute of Technology. 268 pages, \$5.95 (cloth), \$2.95 (soft cover).

Unfolds a simple yet scientifically accurate historical narrative of cosmic rays: how physicists discovered them and, after a half century of work, analyzed their composition. Also how, in the process, they discovered a host of new particles, born out of energy and living but a minute fraction of a second, opening up the field of elementary-particle physics.

QUANTUM MECHANICS AND PATH INTEGRALS

By **Richard Feynman** and **A. R. Hibbs**, California Institute of Technology. **International Series in Pure and Applied Physics**. Available in February.

A comprehensive and scholarly text on quantum mechanics and path integrals by one of the great original thinkers in theoretical physics—Feynman—who was instrumental in developing the path integral approach in the early 1940's.

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Round Hill Estate

(Concluded from page 27)

Research on fog by Professors Houghton and William H. Radford, '32, now Director of Lincoln Laboratory, resulted in development of a method of clearing fog from a landing strip by spraying calcium chloride into the air. Meteorological research in recent years has included studies of the way in which natural air currents distribute smoke and other pollutants, and the results have been applied with success to atmospheric pollution.

It was at Round Hill, in Colonel Green's huge blimp dock, that Professor Robert J. Van de Graaff built the first full-size Van de Graaff generator, 43 feet high and producing 5,000,000-volt, lightning-like discharges in 1932. The original generator later was moved to M.I.T. in Cambridge and, after it became obsolete, to the Museum of Science.

Lincoln Laboratory used Round Hill as the site for research that was important in the development of two new reliable methods of "scatter transmission" of radio signals under the leadership of Professors Radford and Jerome B. Wiesner. Previously, it had been thought that microwaves could be transmitted only within the line-of-sight limitations of about 30 miles. The use of powerful beams and large dish antennas to transmit signals for more than 200 miles by reflecting them off the troposphere was first demonstrated in transmissions from Round Hill. Such research was done in collaboration with the late Major Edwin H. Armstrong and the Bell Telephone Laboratories.

Coming Next Month

THE REVIEW in February will bring you excerpts from a wide variety of new books by members of the M.I.T. community . . .

Including COSMIC RAYS by Bruno Rossi, THE SHAKESPEAREAN IMAGINATION by Norman N. Holland, '47, and ENGINEERING COMMUNICATIONS by Robert R. Rathbone . . .

In addition to reviews of other noteworthy books likely to be of especial interest to M.I.T. people.

Similarly, a method for reflecting very-high-frequency signals from the E layer of the ionosphere was developed by M.I.T. and the National Bureau of Standards, working with the Collins Radio Company of Cedar Rapids, Iowa. Using an enormous "corner array" antenna, 120 feet high and 130 feet wide, Lincoln Laboratory engineers transmitted signals to a Collins station at Cedar Rapids, Iowa, 1,100 miles away.

Scatter transmission methods were indispensable to the development of the Distant Early Warning (DEW) Line and the Ballistic Missile Early Warning System (BMEWS) in the Arctic, and also have been used in underdeveloped areas such as South Vietnam.

More recently, Provost Charles H. Townes and Professor Ali Javan of M.I.T. have used the quiet environment of the wine vault in the basement of the Round Hill mansion as the site for laser experiments aimed at checking certain aspects of the Einstein theory of relativity.

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Class News



'96

Frank E. Guptill died August 25, 1964, in Harvard, Mass., where he has lived for 34 years. For 18 years he operated an orchard. During the Spanish War he served in a light battery, and he was a captain of Engineers in World War I. After graduation he spent 16 years with several electric companies, the last six with Stone and Webster in the Philippines, Canada and various parts of this country. While at Tech he was in the Tech shows and the glee club; after graduation, when he was with the Telephone Company, he was secretary-treasurer of the class. He was also the former owner of the Sears Street garage in Boston. He leaves his widow Catherine (Brown) Guptill and two sons Roger W. and Frank E., Jr., '48, of Fishkill, N.Y. whose associates in the Beacon, Texas Company sent a gift to the Alumni Fund in memory of his father.—**James M. Driscoll**, Secretary-Treasurer, 129 Walnut Street, Brookline, Mass.

'97

There has been very little news, as the word is commonly understood, about the Class of '97 of late. About the only thing we have received from Alumni headquarters is a delayed obituary notice concerning **Edgar C. Bowen, Jr.**, who died May 15, 1962. While your scribe was in the same course, Course II, that Edgar was, I now remember very little about him as we were at opposite ends of the alphabet and not in the same section. I do not remember seeing him after graduation. In the drafting room, third and fourth years, he used to sit on his stool with his shirt projecting out from under his vest, and it was a great temptation to give it a pull in passing, resulting in a good natured scuffle. . . . Our New York group of young (?) M.I.T. grads, '96 to '12, is still included in the monthly luncheons at the Chemists' Club or half mile away from the old club in the new M.I.T. Center. We expect to ask Surge Catapultist, '08, to put his mind on the problem and give our group a solution. A half mile extra walk is quite a lot for we young fellows. More on this later.—**George R. Wadleigh**, Acting Secretary, 70 Flower Avenue, Hastings-on-Hudson, N.Y.

'98

Once again we wish the Class of '98 a very Happy New Year.

In the December Class News we re-

ported that our President, **Ed Chapin**, had been hospitalized in Salem for about two weeks of September for minor surgery. In a recent letter from Marblehead, dated October 16, he advises he will remain in Marblehead until about the middle of November. He adds, "I seem to be getting over a serious situation very well, thanks to a good doctor and my sister." Knowing Ed's optimism and vigor, we expect the next Class News, which will not be written until December 15, can report him to be fully recovered. As further information, Ed and his sister Marion have given up the apartments at 271 Dartmouth Street and expect to be back, around the middle of November, in their former home, the Hotel Eliot, 370 Commonwealth Avenue, Boston, Mass., 02115. . . . We have received from the Alumni Register a notification of the death, on July 21, 1964, of Dr. **Dorothy R. Mendenhall**, née Dorothy M. Reed, Course VII, of 140 Prospect Avenue, Madison, Wis. She received an M.D. in 1900 at Johns Hopkins and, at one time, lectured at the University of Wisconsin in Madison where her husband was a professor of physics. Her family has the sympathy of the Class of '98.—**Frederic A. Jones**, Secretary, 286 Chestnut Hill Avenue, Brighton, Mass. 02135; **Edward S. Chapin**, President, Hotel Eliot, 370 Commonwealth Avenue, Boston, Mass.

'99

Lawrie H. Turner, one of the grand old grads who is still active, is chief chemist of the agriculture laboratory of the Georgia State Division of Conservation. He is rounding out 87 years of youthful interest in carrying on his life work. . . . **David H. Hayden** is a sturdy youngster of 90 years of active life. He solved the problem of the erosion of the Sarasota shore line by building cribs 28 feet in front of the breakwater. This construction reduced the turbulence produced by the collision of the incoming wave with the return of its predecessor. A crest is formed 15 feet in front of the wall but no water will break over the wall. In rough weather the crib formation is uncovered, but in mild weather a smooth sloping beach appears as the cribs are covered with sand. . . . The lectures in the Green Building of earth sciences on September 12 were appreciated. . . . At a meeting of the A.A.V.S.O. at the Woods Hole oceanographic laboratory William von-Arx '55, Professor of the M.I.T. Department of Geology and Geophysics, explained the GEON method of celestial navigation which utilizes the gravitational force and the rotation of the earth.—**Percy W. Witherell**, Secretary, 1162 West Street, Wrentham, Mass.

Happy Birthday

During January two Alumni celebrate their 90th birthday anniversaries; 10 and 18 Alumni reach, respectively, their 85th and 80th milestones, as listed below with dates of birth.

January 1875—**WALTER O. PENNELL**, '96, on the 13th; **LOUIS J. RICHARDS**, '97, on the 15th.

January 1880—**CHANDLER HOVEY**, '02, and **J. ALBERT ROBINSON**, '02, on the 8th; **MARSHALL H. WASHBURN**, '03, on the 15th; **ALBERT E. LOMBARD**, '02, on the 21st; **G. HUNTINGTON CLAPP**, '03, and **HARRY T. ROLLINS**, '04, on the 22nd; **LYMAN E. DODGE**, '01, and **LEWIS E. MOORE**, '02, on the 24th; **LLOYD B. HAWORTH**, '02, on the 25th; and **WALTER SOHIER**, '03 on the 30th.

January 1885—**CARL E. GOLDTHWAIT**, '08, **PATRICK J. KENNEDY, Jr.**, '06, **GUY H. LITTLE**, '10, and **CHARLES L. LUFKIN**, '08, on the 1st; **KURT ROEHRS**, '09, on the 2nd; **W. WATTERS PAGON**, '07, on the 3rd; **JOSEPH T. MOHN**, on the 6th; **CHARLES E. BAKER**, '07, on the 8th; **GEORGE D. WHITTLE**, '08, on the 9th; **J. SCOTT MACNUTT**, '08, on the 11th; **LEANDER M. BROWN, Jr.**, '08, on the 18th; **E. RUSSELL WILLSON**, '08, on the 21st; **OVE COLLETT**, '11, on the 22nd; **CHARLES A. EDMONDS**, '08, on the 23rd; **PAUL L. CUMINGS**, '07, and **EDWARD H. WING**, '07, on the 24th; **S. MARTIN UDALE**, '06, on the 25th; and **ALLEN E. HAZARD**, '08, on the 30th.

In the November issue of The Review a mistake was made in the spelling of the name of **ROLAND H. WILLCOMB**, '07, who was 80 years old November 30.

'01

The only class news that I have is the passing of two more classmates, **Benjamin Miller**, VI, of Cincinnati, Ohio, on September 5 and **Alton P. Trufant**, I, of Whitman, Mass., on September 8. I have no further details.—**Theodore H. Taft**, Secretary, Box 124, Jaffrey, N. H. 03452.

'03

The clarion call from The Review office to your secretary has duly been received but the news they desire seems to be decreasing in terms of our lengthening years. However, another most interesting and historical chapter from **Bill Eddy's** (VII) autobiography seems most appropriate. He writes: "When we were students in Boston the best way to travel between Boston and New York was by boat, an overnight trip. The Providence and the Fall River Lines each operated palatial side paddle steamers with a great iron walking beam in the middle. Both required one to take the train for part of the ride from Boston to either Providence or Fall River and both trains came through my home town of Middleboro. Later Morse competed with two fast twin

screw steamers, the 'Harvard' and the 'Yale' that went all the way by water around Cape Cod. They were taking away much of the trade from the railroad owned boats until one day Morse got caught short on the New-York Stock Exchange, and his victors squeezed him. The penalty—they compelled him to abandon competition, so 'Harvard' and 'Yale' went to the West Coast and sailed for years nightly between San Francisco and Los Angeles. It was a luxurious trip; in sight of land, a fine dinner and orchestra and arrival in time for breakfast. This boat also carried much freight; I always think it strange that when goods are sent by railroad they call it a shipment and when by ship they term it cargo.

"When I came to San Francisco there was no folding money in circulation. There were silver dollars and 5-10-20 dollar gold pieces. There were no pennies and a nickel was the smallest coin used. No goods were ever sold with a price tag of 39¢ or 98¢. . . . After graduating from M.I.T., I went to Schenectady, N.Y., with the General Electric Company in the Testing Department with classmates **Andrey Potter**, **Charles Glenn** and **William Mitchell**. I still have a photo of our Thanksgiving Dinner in Schenectady in 1903. . . . After authoring articles in the *Electrical World and Engineer*, McGraw-Hill's handbook of electrical engineering, I was listed in several editions as an authority on induction coils. In 1906 I was employed by the Victor Electrical Company in Chicago and designed for them their first X-ray machines. The Victor Company was taken over as a subsidiary of General Electric and became their X-ray and electro-therapeutic department. I still have as a souvenir one of those early machines for my local (Salinas, Calif.) museum. . . . When the oil fields were being developed, Taft, Calif., was an open town; three shifts of drillers worked round the clock and there were more people about at midnight than at mid-day. During the Depression of '39, I saw San Francisco developed, the present airport required tremendous fill and building and electrical plants, bridges and water and sewerage facilities including parks. The town of Salinas is named for salt in Spanish, being adjacent to the extensive salt flats of the Elkhorn Slew. I saw it grow from a population of 10,000 inhabitants to over 50,000 at present; it is located one fourth of the way between San Francisco and Los Angeles. Salinas is noted for a huge quarry of dolomite (white lime) for 'quick lime' and by product magnesium operated by the Kaiser Company and Dow Chemical Company. Salinas Valley is the Salad Bowl of the world with black loam 10 feet deep which provides three crops a year. This acreage is irrigated from drilled wells pumped by electric motors of over 200 horsepower. Here sugar beets are grown by the Spreckles Sugar Factory, the largest in the entire world.

My home for retirement is built of 16 inch walls of rammed earth, between adjustable forms and steel reinforced. This differs from the usual adobe brick construction. Some of our friends call our home the 'Eddy Museum' as my hobby is

collecting Indian arrowheads, with leisure time for art and carving some jade. As May West would say 'Come up and see me some time.'"

Our happy birthday greetings go to **Jose H. Aguilar, I**, for his 90th on November 3. For 85th birthdays, our greetings go to **Warren F. Currier, V**, on October 11; **Henry Fitzler, XIII**, on October 27; **Jay B. Simon, III**, on October 29; and **Harry R. Low, III**, on November 30. . . . **Robert B. Peters, II**, Laguna Beach, Calif., passed away July 12; no details are available. **Frank S. Bradley, III**, of Dover, N.H., also passed away, on September 15.—**John J. Nolan**, Secretary, 13 Linden Avenue, Somerville, Mass.; **Augustus H. Eustis**, Treasurer, 131 State Street, Boston, Mass.

'04

I hope you will forgive the brevity of 1904 Class Notes this month, but our class secretary was taken to the hospital as an emergency case about three weeks ago. . . . I am glad to report that Carle is improving every day and is expected to leave the hospital this coming weekend to continue his convalescence at home. I am sure a card to him at 120 Beacon Street, Boston 16, Mass. would be greatly appreciated. . . . Carle was notified recently of the death of our former classmate **Arthur S. Webster** by his daughter Mrs. Webster Norton and at his request she sent a brief historical sketch of her Dad which I believe you will find very interesting. . . . "Arthur S. Webster died March 24, 1964 in Abington, Mass. He was born April 10, 1883 in Roxbury, Mass. After attending Roxbury Latin School, he entered M.I.T. and graduated in 1904. His remarkable mechanical inventive ability was evident in his early youth, when in 1900 he built his own first automobile, named the Cannon Ball Special. His interest in automobiles and machinery remained an important part of his life. While still attending classes at M.I.T. he started his early career working Saturdays at the Continental Sugar Refinery. After graduation at the age of 21 (he was the youngest member of his class) he became assistant chief engineer at the refinery. During the continuing years his efforts were directed toward research and development of various inventions, many of which were patented. During World War I, his interests were in marine shipping and printing machinery, as well as chemical research. In 1916 he married Emily A. Duffy, of Cambridge, Mass. Her death preceded his by a few short months. He is survived by seven children."—**Eugene H. Russell, Jr.**, Treasurer, 82 Devonshire Street, Boston, Mass.

'06

It is quite possible that a note will be enclosed with some Christmas cards and if so, we secretaries should have more news for later class notes. As of mid-November my only recent mail was a long

and welcome letter from **Guy Ruggles, III**, and a personal note from **Chet Hoefler, I**. Guy had made a biennial trip to California in August and September to visit friends and relatives, from San Diego to San Francisco. Some of the friends he visits are from his 26 years at Inspiration, Ariz., and almost 20 years at Cananea, Sonora, Mexico. He made the trip in 1957 by plane, bus and taxi, but since then by car—much more satisfactory, he says. Guy made one M.I.T. contact, a call on George H. Booth, '98, and his wife in Long Beach. He thinks the trip did him a lot of good (change of scene, you know) and says his doctor has to look him over quite closely to find something to treat him for: "as for keeping busy, that is the least of my troubles." You miners are a tough lot, Guy!

. . . In previous notes the death of **Arthur Morton Cheney, II**, S.B. was reported. He was born April 4, 1884, in Camden, N.J., and died March 24, 1964, in Philadelphia we believe. Although his home was in Camden, he had prepared at the William Penn Charter School in Philadelphia; was a member of the Mechanical Society and his thesis was entitled "An Investigation of the Effect of the Amount and Temperature of the Mixing Water upon the Strength of Cement and Cement Mortar Briquettes." For our 1916 history he reported that his first two years out were with The Illinois Steel Company. During the next 6 or 7 years he was associated with his father's insurance company in Camden as an agent and broker, then for a few years was a designer with the Seubert Bearing Company of Long Island City, and having later connections with similar companies—Standard Steel & Bearing Company of Philadelphia in charge of tests; with New Departure Company of Bristol, Conn., becoming their metallurgist; and around 1948 was patent engineer for SKF Industries, retiring by 1961 when his address was West Walnut Lane, Philadelphia.

Another death previously reported was that of **Clarence Emmett Lasher, VI**, on April 3. He was born September 29, 1881, in Saratoga, N.Y., but his home address was North Adams, Mass., where a brother still spends his summers. Clarence entered with us but had to leave during our junior year because of eye trouble. He had played tackle on our soph football team (won 17 to 0) and was a charter member of Beta Chapter of Theta Chi. For our 10 year history he reported that he had spent 2 years in the G.E. Testing Department; 3 years as assistant superintendent North Adams Gas and Light Company; and 2 years as business manager of Milford Electric Light Power Company. From then on, his connections were all with public utilities; several years with the Pawtucket, Rhode Island, Gas Company, as sales manager and industrial engineer, then out to the West Coast by 1920, at first as superintendent with the Puget Sound Traction, Light and Power Company at Bellingham, Wash.; then with the Tacoma Gas & Fuel Company, and since about 1925 he had been manager of the Washington Gas & Electric Company at Everett, retiring in 1957. His memberships were

many: Trinity Episcopal Church; Everett Library board; Golf and Country Club. He was past president of the Puget Sound Technology Club, the Everett Chamber of Commerce, the Rotary Club and the Men's Garden Club. He was also past chairman of the board of directors of Everett YMCA. Clarence Lasher had lived a full and fruitful life and surviving are his wife, Sarah (Henderson) whom he married in 1907, a daughter, Mrs. Dorothy Garcia, and two grandsons. In her letter informing me of her husband's passing, Mrs. Lasher referred to his sustained interest in M.I.T. and his interested reading of Sam Prescott's, ('94) book "When M.I.T. was Boston Tech." Dr. and Mrs. Prescott had been their house guests.

In the Boston Herald of last October 16, among the "Other Deaths" reported I spotted "McGinnis—in Clearwater, Fla. Dr. **Claude S. McGinnis**, 83, chairman of Temple University's Department of Physics for 31 years." As no date was given I later wrote to his Florida address for more information. **Claude Stonecliff McGinnis**, VIII, S.B. Ph.D., was born October 21, 1881, at Indianapolis, Ind., and died October 11, 1964, in Clearwater, Fla. He prepared at Shortridge High School in Indianapolis; entered with us; was a member of the Mandolin and Banjo Clubs, the Physico-Chemical Club, and the E.E. Society. His thesis was, "Coefficients of Expansion of Zinc-Silver Alloys by the Abbe-Fizeau Dilatometer", with B. W. Kendall. After a year at Tech as assistant in physics he became an instructor in that subject at the University of Pennsylvania in Philadelphia. He obtained his Ph.D. degree at University of Pennsylvania in 1911 and went up to Fredericton, N.B., for some 9 years or more, as professor of physics and electrical engineering at that university; then in 1920 becoming professor of physics and later head of that department, at Temple University in Philadelphia, retiring as emeritus in 1951 or 1952 and his home has since been in Clearwater. In 1909 he married Miss Margaret E. Enman and in 1916 he reported that they had one child. . . . Through the Alumni Office has come a report of the death in New York City on May 27, 1964, of **Philip Bridges Sadtler**, X, S.B. who was born February 21, 1884, in Philadelphia. He also prepared at the William Penn Charter School; was a member of the Technology and Pennsylvania Clubs and his thesis was, "A new Method for Technical Preparation of Zinc Chloride." For a few years he was chemical engineer with the West Virginia Pulp & Paper Company and by 1910 was the vice-president of Swenson Evaporator Company in Chicago. By 1935 his address for a few years was Los Angeles, then Birmingham, Ala., then NYC and Norwalk, Conn. During a period he "was a consultant on process engineering in the sugar, paper, and distillation industries to many well-known companies." Phil's background is interesting. His great-grandfather (Philip B.) fought in the war of 1812 as commander of the Sadtler Yeagers in the defense of Baltimore. His grandfather (Dr. Benjamin) was a Lutheran minister and the first president of

Deceased

FRANK E. GUPTILL, '96, August 25*
BENJAMIN MILLER, '01, September 5*
ALTON P. TRUFANT, '01, September 8*
ROBERT B. PETERS, '03, July 12*
FRANK S. BRADLEY, '03, September 15*
ARTHUR S. WEBSTER, '04, March 24*
FRANK S. WILSON, '04, July 11*
ARTHUR M. CHENEY, '06, March 24*
CLARENCE E. LASHER, '06, April 3*
CLAUDE S. MCGINNIS, '06, October 11*
PHILIP B. SADTLER, '06, May 27*
BRADFORD W. DRAKE, '07, Sept. 16, 1963*
FRANK W. POLAND, '07, March 26*
HENRY DUN, '08, October 26*
LOUIS JACOBY, '09, March 3*
THEODORE B. WHITTEMORE, '10, May 22*
JOSEPH A. AARON, '11, November 2*
ARTHUR S. HILDRETH, '12, May 9
HAROLD WATKINS, '12*
ALBERT D. CONANT, '13, May 14*
RALPH H. PERRY, '14, November 5*
EDWARD C. TAYLOR, '14, August 16
C. HOWARD WILKINS, '14, July*
EDWARD PROCTOR, '15, March 29*
HAROLD H. MITCHELL, '16, June 29
JOSEPH B. WIRT, '17

Muhlenburg College, Allentown, Pa., in 1848. His father (Dr. Samuel) was professor of chemistry at University of Pennsylvania and Philadelphia College of Pharmacy and founder of the Sadtler Research Laboratories in Philadelphia. Survivors are his widow, the former Ruby Reid, three daughters, four grandchildren, and a great-grandson.—**Edward B. Rowe**, Secretary-Treasurer, 11 Cushing Road, Wellesley Hills, Mass. 02181.

'07

I am sure all the men will be glad to know that our President, **Don Robbins**, has recovered as fully as possible from his ulcer operation in September. Don says he has no difficulty in getting along with only one half of his digestive cavity but does watch his food consumption closely. The November issue of *The Review* tells of the Bronze Beaver awards made at the Alumni Association Dinner on September 11 in Walker Memorial to 11 M.I.T. alumni. Unfortunately, **Don Robbins** was not able to be present to receive his award. He was cited "for his efforts as Class President and Regional and Special Gifts Chairman of the Alumni Fund." However, Don was able to attend the Alumni Council Dinner on October 26, where his efforts for M.I.T. received proper recognition. . . . I received a note from **Chick Kane**, '24, telling that our former secretary, **Bryant Nichols**, received a Bronze Beaver citation some years ago; but no Beaver was available. One is now available with his name on it; and I suggested that, as Mrs. Nichols was deceased, it be sent to one of his daughters, Mrs. Everett Ryder of Framingham, whom I felt sure would appreciate it.

To those class members whose 80th birthdays occurred during October, 1964, I owe an apology for the lateness in

ARTHUR E. BURKE, '18, September*
HENRY ERICKSON, '20*
FRANK LAWTON, '20, November 1*
GEORGE MANNING, '20*
ADRIAN MARRON, '20, June*
HARVEY C. ALLEN, '21
HAROLD M. ESTABROOK, '21, August 18
ALFRED E. SHAW, '22, October 1
CHARLES H. DEMMING, '24, August 14*
JOSEPH CASHMAN, '25, July 3
RICHARD MURRAY, '26, September 22
HENRY D. JOHNSTON, '27, Sept. 10*
FRANK E. LA CAUZA, '27
SARGENT P. HUFF, '28, June 10
LOUIS J. O'MALLEY, '28, August 17
WALTER GREYMONT, '30, October 20*
JOHN KENYON, '30, August 6*
ALVAH RAYMOND, '33, May 2
DAVID S. WHITAKER, '37, May 17
JAMES M. CLIFFORD, '37, August 27
HUGH G. PAYNE, '39, May 25
ELLIOTT W. REED, JR., '45, April 23
RICHARD B. DAVIDSON, '49, September 28
WALTER S. VON MEYER, JR., '52, Sept. 10
JOHN W. REDMOND, '59, August
CHARLES L. THORNTON, '59, Sept. 13
PAUL MOSNER, '60, September 30
STEPHEN WOO, '62, September 29*
 * More information in Class News.

sending out their letters. The reason is that the list was not available until I received the November Review, as no Review was published in October. . . . I am enjoying the replies that come in from my "80th birthday letters." In fact, **Seymour Egan** wrote me on November 6 and thanked me in advance for his letter which he hoped to receive on November 11. I made sure his got to him on time. Seymour has been visiting his daughter and family in Jersey City but came back to Wakefield to vote. He plans to go to Churchville, where another daughter is married to Louis E. Garono, '35, Course X. . . . **Herb Eisenhart** retired 14 years ago from the presidency of Bausch & Lomb. He is still serving on four company boards and holds two bank positions, as well as serving several educational institutions. He writes: "I'm never at a loss for something to do. For all this I am very thankful." Herb has a married son and a married daughter living in Rochester. His other son, a bachelor, lives in Washington, D.C. Two grandsons are in Princeton and a third at Choate School. Of his four granddaughters one is in college at Scripps, Calif.; one at Mt. Holyoke; one in Wheaton; and the fourth at Columbia in Rochester. Congratulations, Herb, for what you have done for this generation, yourself, and the help you are giving to the rising generation of businessmen and women. . . . **Phelps Swett**, I, wrote, chiding me, for mistaking New Hampshire for Vermont and not visiting him this summer, when I took a few days' vacation in the mountains, as I had told him I would try to do. He wants me to visit him while we are both young, that is, before we become octogenarians in 1966. My mention of the death of **Chick Eaton** recalled to Phelps that, up to this time, the members of the '07 sophomore relay team that ran a dead heat with the freshmen in 1904, were still very active. . . . **Tom Gould** was captain; and the

other runners were Phelps, Chick Eaton, Charles Bragdon, and Karl Richards.

Jim Barker, I, sent me further information about the **C. D. Howe Memorial Foundation**, which was mentioned in the December Review notes. "The resources of this Foundation are to be directed toward educational fellowships for Canadians, and they plan in addition to institute a program of so-called Howe Awards which would be the Canadian equivalent of Nobel Prizes." We, of 1907, should feel very grateful to **Jim** for the important part he played in the establishment of this foundation which is to have such an important part in keeping alive the memory of a Waltham, Mass., boy who became an M.I.T. graduate engineer and then a great Canadian. I will include further information on this subject in a later Review.

At our 55th Class Reunion, held at the Oyster Harbors Club in June 1962, your Secretary was instructed to make reservations for an interim reunion in June of 1965, which he did. Soon after you receive this copy of *The Review* in January 1965, I will mail to you a reply postal card asking your views about such a reunion and the possibility of your attendance. Please give this matter your earnest consideration so that you can return the reply card to me promptly, as the Oyster Harbors Club will ask for a confirmation or cancellation of our reservation very early in the spring. Remember, June, 1965, is just around the corner. . . . Since the notes were sent in for the December issue of *The Review*, I have received notice through the Alumni Register of the death of two of our associate members: **Bradford W. Drake, II**, of Whitman, Mass., died September 16, 1963; and **Frank W. Poland, II**, of Marion, died March 26, 1964. A note from Frank's widow stated that he had willed his body to Harvard Medical School and that no funeral was held. I find no information of interest on either of their record cards. Could any of the Course II men write to me about them? I wrote letters of sympathy on behalf of the class to both families and may have further information to report in the next Review.

—**Philip B. Walker**, Secretary-Treasurer, 18 Summit Street, Whitinsville, Mass.; **Gardner S. Gould**, Assistant Secretary, 409 Highland Street, Newtonville, Mass.

'08

The first dinner meeting of the 1964-1965 season was held at the M.I.T. Faculty Club on Wednesday, November 4 at 6 P.M. The following classmates showed up: **Bunny Ames**, **Bill Booth**, **Nick Carter**, **Fred Cole**, **Fred Joy**, and **Heinie Sewell**; also guests, **Mesdames Joy and Sewell**. We met as usual in the cocktail lounge and while enjoying our favorite tonics and the delicious crackers and cheese from the buffet talked over our activities of the past summer. There were few comments on the recent election. About 6:30 P.M. we adjourned to private dining room Number 4 for a tasty dinner. We had no kodachromes, as **Joe Wattles** was on his

way to Florida for the winter. . . . We were sorry to report the death of **Henry Dun** at his home in Wilton, Conn., on October 26, 1964.—**H. Leston Carter**, Secretary, 14 Roslyn Road, Waban 68, Mass.; **Joseph W. Wattles, 3d**, Treasurer, 26 Bullard Road, Weston 93, Mass.

'09

We are submitting further letters addressed to **John Davis** and read by him at the class meeting at the Reunion. These have been withheld because of earlier space limitations. From **Bob Keeney**: "I regret that I will be unable to attend. However, I am in good health, but a little fragile. Enclosed is a contribution of \$5.00 for expenses and the Class Fund. Please say 'hello' for me to anyone I might know. With best wishes for a successful and happy 55th." . . . From **Sam McCain**: "Have just received the letter about our 55th reunion and sincerely regret that I shall be unable to attend. My health has not been up to par lately and I am afraid that my traveling days are over. My wife and I certainly enjoyed our 50th reunion at Snow Inn. Please extend my best wishes to those who attend the reunion." . . . From **Weston Radford**: "I have just received all the information about our 55th Anniversary and it sounds very good. I wish that Fort Lauderdale were a bit closer to Boston so that I could attend but it is quite a hike from here to there. I think that we will have to skip this year, but we will hold very positive thoughts for the 60th. Kindly give our best regards to all the people that we met at Snow Inn in 1959. Please remember us especially to the Fishers from Providence, and tell them that among our best friends down here are the Thayers, Fowlers, Browns and others from Pawtucket. They also send their best to the Fishers. I am glad to enclose my check for \$5.00 to the Class Fund."

From **Kenneth Blood**: "The notice I received of our 55th anniversary did not include the return postcard which I was supposed to return to you, so I am writing a note instead. I had hoped to attend this celebration but find that I will be unable to do so. I am enclosing a check for \$5.00 to help meet anniversary expenses." . . . From **George Gray**: "Enclosed is my contribution toward the '09 anniversary expenses as per your letter of May 18. I had hoped to be able to attend this reunion but have now decided against it. Best wishes for a most successful reunion." . . . From **Andrew Matte**: "I regret that for reasons of health I shall be unable to attend the 55th reunion of the Class of '09. Enclosed herewith is a check for \$5.00 as a contribution towards the anniversary fund. I hope that the weather will co-operate and that you and the rest of my former classmates will have a most enjoyable time, as I did five years ago. With best personal regards." . . . **Frederic W. Watriss, '41**, Assistant Treasurer, M.I.T., sent us the following in a letter: "I am pleased to notify you of **Mr. Bradley Dewey's** gift of securities

for the M.I.T. Alumni Fund and the Class of 1909. Mr. Dewey has requested that I forward this information to you, as Class Secretary." We know that the Alumni Fund is grateful to Brad for his generous gift and the class is also, particularly since this amount will be credited to the class contributions.

With reference to the Alumni Fund, in 1963, '09 was the leader in per cent participation, a fact stated in Molly's letter to the class in the spring. This year '09 is listed among the leaders, being fifth with 44 per cent. . . . In the December notes we told of **Alice Desmond's** trip abroad to obtain material for a book which she is writing concerning the tragic life of the daughter of **Marie Antoinette**. We have recently received from Tom and Alice a copy of her latest book, "Sword and Pen for George Washington," another addition to her list of notable publications. This is a story of the varied young men, many of whom were his aides on the battlefield, who volunteered their swords and their pens to the service of George Washington. We can highly recommend this book. . . . We have received a notice from the Alumni Office of the death of **Louis Jacoby, VI**, at Dallas, Texas, on March 3. Louis' home was Dallas. He received the A.B. at the University of Texas before entering the Institute. Our records show that for the most part he was employed by the Westinghouse Electric and Manufacturing Company up to 1927. From 1946 to 1952 he was connected with the Chase National Bank of New York at its Chicago branch. He returned to Dallas in 1952.—**Chester L. Dawes**, Secretary, Pierce Hall, Harvard University, Cambridge 38, Mass.; Assistant Secretaries: **George E. Wallis**, Wenham, Mass.; **Francis M. Loud**, 351 Commercial Street, Weymouth 88, Mass.

'10

A few months ago **Clive Lacy, '15**, told me that **Dick Bicknell** was in the Deaconess Hospital in Boston, quite ill. On this information I visited Dick and found him in an optimistic frame of mind and not feeling too badly. Apparently Dick was quite pleased that I made the call and I received the following letter from him: "I want to express my appreciation of your kind visit to me in the hospital. I only hope that I was sufficiently coherent to talk intelligently. It was a gruelling experience, and I am still far from complete recovery. I spent a few weeks at Storrow House in Lincoln, and then decided that I would be better off at home. I flew in day before yesterday but I had no strength to spare. While I came to Boston just for a little visit, my difficulties matured very rapidly, and I fortunately landed in what is perhaps one of the best places in the United States for therapy. Only time will tell whether mine is successful, but so far things look good. I am no longer 21 and that proves to be a bit of a handicap toward recovery." . . . No doubt you have received my request for class dues to run our 55th Reunion, to be held next June. The returns for class

dues are very encouraging and many give short notes of what classmates are doing in business and retirement. . . . **Jim Tripp** writes: "Fred Dewey, Henry Schleicher, Carroll Benton regularly meet once a month and all hope to be present on 55th." . . . **Joseph W. Northrop** writes: "Still get down to the office every day, but don't know how long I will be able to keep it up, as my 78 years are beginning to tell on me! Really wish I could make it up there and see you and the rest of the good old bunch. Tell them 'Howdy' from Texas". . . . **Kenneth P. Armstrong**: "Am still in excellent health. Continue to be active in DeMolay. Am still a member of Opalocka Planning Council. I have three great-granddaughters." . . . **Walter T. Spalding**: "I hope it can be a weekend affair as in 1960. News later."

Hiram E. Beebe: "There are not the pulls of former years. My West Newton cousin died about a year ago. Both Buffalo, N.Y., cousins have passed away. Where is **Dudley Clapp** who wrote 'The' poem? Mrs. B and I are still in the Hollywood Bowl Easter Morning Sunrise Service, and I was on the local committee in charge of National Phi Delta Theta Convention in September." . . . **Frank Bell**: "Things about as usual with me. Still active in business and civic affairs." . . . **Allen A. Gould**: "As to class notes: We had a very pleasant party relating to 1910 when Rae and **Andy Fabens** celebrated their 50th wedding anniversary here in September at the home of one of their sons. There was a large and lively turnout of the second and third generation of the family and of old friends from far and near. One who came was 'Chief Bunny' Wilson, '11, who was known to many of our class. He retired not long ago after being top man in the Aluminum Company of America and the aluminum industry for years. Immediately after graduation Andy went with the company himself and stayed for awhile before branching out. He left a couple of weeks ago for his winter home in Delray." . . . **R. F. Goodwin**: "For a year or so have had trouble with my vision, which, it is hoped, will clear up." . . . **Russell Hastings**: "My first great-grandchild was born September 7, 1964. Her granddad was Russell H., Jr. who came within a week of being '10's class baby. Russ was M.I.T. '34." . . . **James R. Stevenson**: "Still going strong. Raising apples and pears and Angus." . . . **Atwood C. Page**: "Mrs. Page is not able to make the trip to Boston, and I do not want to be away from home for any length of time." . . . **Charles F. Doble**: "It has not been possible for me to attend '10's get-togethers all these years. Hope all will have a good time." . . . **Fred R. Lufkin**: "Greetings and best wishes. Sorry, but have no personal news." . . . **Earl W. Pilling**: "Am now chairman of loan department of Dedham Co-op Bank; a listener of 600 classical records and possessor of 2,500 books of which 500, plus or minus, are devoted to art." . . . **Mrs. Theodore B. Whittemore** notified me that her husband passed away on May 22, 1964.

Jack Holbrook writes: "My case his-

tory is not very exciting. Briefly, I was connected with N.Y. Central Railroad for 35 years, the final ten as a mechanical engineer, retiring in 1954. After a bit I was hired as an H.V.A.C. estimator by Voorhees, Walker, Smith, Smith & Haines. All of the work was interesting but not very remunerative. About a year ago I had a little coronary trouble and VWSS&H decided against further work for me. Since then I have been fairly inactive, but I hope to get to some of these 1910 monthly luncheons in New York City. I greatly enjoy reading the class notes you prepare for Tech Review, and hope they will continue for a long time."

—**Herbert S. Cleverdon**, Secretary, 120 Tremont Street, Boston, Mass.

'11

At the annual November get-together of the Greater Boston '11ers, Clark, Comstock, Herlihy, Linehan, MacPherson, Omansky, Richmond, Sisson and Stewart met for a round-table luncheon at the M.I.T. Faculty Club. The talk-around which followed the reading of a message from President **Howard Williams** developed little change in the activities of those present during the last 12 months. An attempt was made to get preferences of the group in respect to the locale for our 55th Reunion. There was only one vote for a "trip to the Cape" type of program which was favored in our more active years. . . . Happily for us Don Severance, '38, Executive Vice-president of the Alumni Association was in the club and joined us. He suggested the possibilities of getting co-operation from the Institute if we wished to utilize their facilities in 1966. We shall appreciate having suggestions from those classmates who are considering attending our 55th. . . . **Carl Richmond** let me read a letter he received from **Harry E. Lake**, I, who upon graduation joined the staff of Dr. Percival Lowell at his observatory in Flagstaff, Ariz. Harry is now living in Livermore, Calif., about 40 miles east of San Francisco. For 40 years Harry was engaged in developing and improving oil and gas burners and equipment as well as steam and hot water boilers. He has had many patents issued to him. Harry reports having had four "rendezvous with death" but manages to get around by car and by foot. He would like to hear from any classmates who get in his area. . . . A news release from the Water Pollution Control Federation cited **Harold E. Babbitt**, XI, in a long review of his 50-year career as a college professor in the universities of Missouri, Iowa, Seoul in Korea, and Roerkee in India. The W.P.C.F. is a non-profit, technical, non-government group of more than 12,000 members and subscribers with headquarters in Washington, D.C.

John Rice Bell, X, died on December 22, 1911. In 1962 a gift was made to establish a memorial scholarship in his memory "preferably for students in the Department of Chemical Engineering." In October of 1964 another gift was made to add to the principal of this memorial

fund. Born at Minneapolis, Minn., John prepared at Malden, Mass., high school. He was assistant art editor of *Technique* in 1911. . . . **Joseph A. Aaron**, VI, died November 2, 1964, while shaving. Joe was born in Lynn, Mass., and prepared at Boston Latin School. I understand that for a number of years Joe was a civilian employee at the Charlestown Navy Yard. In 1940 he was listed as an accountant with an office on Tremont Street in Boston. While living in Brookline, Mass., since his retirement, Joe did some tax work for his friends. **Maurice Lowenberg** represented our class at the funeral. Joe is survived by a sister Bertha. . . . Rarely do I get reactions from these news items, but my granddaughter Beth, after reading in my report of Alumni Day activities that I had spent the evening with my daughter-in-law and the Class of '39, observed that I had not said her mother's name is Lucille. . . . Changes of address: **Ernest J. Batty**, Box 576, Mashautum Road, Dennis, Mass. 02638; **Albert L. Gardner**, 31 Wilbur Street, South Weymouth, Mass. 02190; Professor **Robert Schurig**, 1042 Wendell Avenue, Schenectady 8, N.Y.; Professor **Gordon B. Wilkes**, P.O. Box 726, East Orleans, Mass. 02643; **David P. Allen**, c/o Mrs. E. Leich, Huntingtown, Md. 20639.—**John A. Herlihy**, Treasurer and Acting Secretary, 588 Riverside Avenue, Medford, Mass. 02155.

'12

Word has just been received of the death of **F. Lawrence Mowry** who passed away at his home in Evergreen Park, Ill., in July of this year. . . . **Arthur G. Hildreth** passed away on May 9 at his home in Westford, Mass. . . . I know you will be interested in hearing further details of **Harold Watkins'** life, not available when I reported his death recently. On retirement he was vice-president of operations of the Akron, Canton and Youngstown Railroad after having been in their service for 16 years. He retired in 1958 leaving his home in Akron to retire to Boca Raton. He leaves his widow, three sons, and seven grandchildren. . . . An article in the *Boeing Magazine* gives a very interesting account of the part that our Dr. **Jerome C. Hunsaker** played in the design of early flying boats. His were the first planes to circumnavigate the globe. Dr. Hunsaker, who was 78 in August, goes to his office at M.I.T. every day and makes frequent trips to Washington, D.C., to attend meetings of the Smithsonian Institute, of which he is a director. He is the recipient of many honors among which are the Wright Trophy, the Godfrey L. Cabot Trophy, the Langley Medal, the Gold Medal of the Royal Aeronautics, and the U. S. Navigation Award for distinguished public service. His present position was well summed up by the National Aeronautical Society in 1955 when it named him the "Elder Statesman of Aviation," a distinguished title for a great man.

Charles Rowley of Cleveland hasn't slowed down a bit. He is going to Los

Angeles to spend Thanksgiving with his married daughter. Then Carl and his wife are coming East for Christmas on the Cape. . . . **Arch Eicher** is at work every day at Merritt, Chapman & Scott at their Cleveland office. His wife Agnes' father recently suffered a severe accident, and she left for Phoenix to be with him.—**Frederick J. Shepard, Jr.**, Secretary, 31 Chestnut Street, Boston 9, Mass.; **John Noyes**, Assistant Secretary, 3326 Shorecrest Drive, Dallas 36, Texas.

'13

We hope you all had a very Merry Christmas and we now wish you a very happy New Year. We missed the December issue, for as usual this household spent several months campaigning. We are elated to report that our favorite candidate, Edward W. Brooke, was re-elected as the Massachusetts attorney general with a 750,000 plurality. . . . Your Scribe attended the Boston M.I.T. Club Luncheon at the Union Oyster House on October 15, 1964. This club meets generally on the second Thursday of each month except during July and August. The dues are only \$4 a year. Mr. Edward Logue, Director of the Boston Redevelopment Authority, was the guest speaker at the October meeting; he related some of the trials and tribulations of his organization and some of the plans for the future of the new Boston. You classmates who live in the vicinity of Boston should join **Charlie Thompson** and **Phil Capen** at these monthly meetings at the Oyster House, Union Street, Boston at 12:00 P.M. or a trifle earlier for closer association as suggested by **Allan Waite**. If any of you members are interested you may write to us or directly to the Secretary-treasurer, Bruce B. Bredehoft, '56, at Loomis, Sayles & Company, 140 Federal Street, Boston. . . . Once again, we must report the passing of a very loyal classmate **Albert D. Conant**, 237 Maple Street, Danvers, Mass., on May 14, 1964. Al had been confined for nearly 40 years, suffering from the effects of tuberculosis. Although he was unable to attend our class affairs during this period, he was an enthusiastic correspondent and forever cheerful. We shall miss him and to his dear family we extend our sympathy.

It is noted that our regular winter sojourners to southern climes have started. We have been informed that **Lester Gustin**, **Ed Taft**, and **Gordon Howie** have already reached Florida. Lester Gustin has forwarded to our recording office an accumulation of menus, graduation programs and reunion agendas. So in later columns we shall quote some of the pertinent facts for your reminiscences. By the way, Lester, as president of Somerville High School (Massachusetts), Class of '09, headed their 55th Reunion. It was reported that after these many years, the class is still solvent, and this reunion was celebrated by 40 members and their spouses. Can any of you other retirees or activees match Lester in his many endeavors or accomplishments? Stop a few

minutes and with pen, pencil or that old typewriter record some of your daily pursuits; send them to us. We know that all of your classmates turn to the Class News when The Review is received. . . . Our boy, **Robert D. Bonney**, retired vice-president and director of Congoleum-Nairn, Inc., and a president and honorary member of the Federation of Societies for Paint Technology, was elected to an honorary membership in the American Society for Testing and Materials during the 1964 annual meeting of A.S.T.M. on June 23. This honor was bestowed on Bob for his 40 years of hard work and leadership in the A.S.T.M. He is, of course, a native of Wakefield, Mass., received his S.B. in 1913; was an instructor in analytical chemistry in 1914-1915 at M.I.T. while devoting much of his time to graduate study. Bonney, in 1915, joined the ranks of Bird and Son as a chemist; in 1918 he became the chief chemist for Congoleum-Nairn and through the years advanced to become vice-president in charge of manufacturing, until his retirement in 1957. Bob was president of the Philadelphia Paint and Varnish Production Club in 1927; president of the New York Paint and Varnish Production Club in 1946; and president of the Federation in 1950-1951. He is an honorary member of the Baltimore, New York and Philadelphia Societies. Since retirement he has become a gentleman farmer and horticulturist on his plantation at Elkton, Md., specializing in rare plants and Black Angus cattle, as well as local community services. Yes, Bob, we are proud of you and will be looking for you and Jeanne in June.

Speaking of June 1965, it seems from the consensus, with Alumni Day set for Monday, June 14, 1965, that we should decide how many days prior to that date we should reunite. It appears that most of us would prefer to return to the Oyster Harbors Club. We have already asked the manager Don Church to tentatively reserve accommodations for 40 persons for three days prior to Alumni Day. We have been informed by Fred Lehmann, '51, Alumni Association Secretary, that the Class of '20 is planning to hold its 45th at the Oyster Harbors Club, but of course, there will be sufficient facilities for '13. . . . We were very much pleased to hear from **Charlie Brown** from way out there in New Mexico and we quote in part: "I think it has been a long time since I wrote and it is time to think about next year, which isn't very far away, so here goes." He states that they have attended two meetings at the Albuquerque M.I.T. Club, which is 250 miles from his home, and they felt so welcome they intend to attend more of the meetings. "We have now lived here in the desert for over a year, and feel that we made a good move in retiring to this small town, as all are friendly; living costs are down; the weather is fine all the time; and there is no snow. It is now 5:00 P.M. and the sun is getting ready to retire. The sky is almost cloudless; wind calm; temperature 58 degrees. About 25 quail have been for their feed, and the prospects for a view of Echo I and Echo II are very fine, with the whole sky for viewing." The Browns seem to be enjoying their sojourn in New Mexico even

though their nearest shopping center (except for food) is 32 miles away; even their doctor is located at that distance, but the alternative physician is in Las Cruces, just 93 miles away. Even these miles would seem to indicate isolation but such is not the case with no traffic and driving speeds 60 to 70 m.p.h., a few minutes cover lots of miles. They celebrated their 50th wedding anniversary in Hollywood in May. Thanksgiving was spent in Los Angeles with their oldest son and family. They also will visit friends in Scottsville. Their youngest son has retired from the Air Force, but lives in Eugene, Ore., a mere 1,500 miles away, nearly a five days' trip. Charlie states that they hope to visit Massachusetts next fall. Make it June, dear people. . . . Charlie, I judge, is also glad that the election is over and we shall return to normal as there were more votes cast for Goldwater than Republicans registered, yet the Democrats outvoted them 1 to 1½. . . . Well, until February keep well and busy, but don't forget the 52nd Reunion.—**George Philip Capen**, Secretary-Treasurer, 60 Everett Street, Canton, Mass.

'14

Word has been received of the death in July of **Charles Howard Wilkins**, Course II, at 20 Kenne Street, Bedford, N. H. He leaves a wife, who was Bertha McGiven, and two grown sons. A large part of his professional career was as an executive with the Wilkins Paper Box Company of Boston. . . . Also **Edward C. Taylor**, Course XI, died August 16, 1964, at Hillside Road, Woodstock, Vt. His wife was Margaret L. Anderson and there were two children, a boy and a girl. After a brief experience teaching in Springfield, Mass., he moved to Washington and was connected with defense activities during the war. Later he became a member of the firm of Chapin and Neal in Springfield, Mass. In 1947 he moved to Woodstock, Vt., where he lived until his death. . . . The most recent death to report is that of **Ralph H. Perry**, Course II, who died suddenly November 5, 1964. His address was 5 Manitou Road, Westport, Conn. He is survived by his wife, who was Beatrice Girvin, and two married daughters. He spent practically all of his professional life with the Progressive Manufacturing Company of Torrington and was vice-president and general manager. This company was later combined with the Torrington Manufacturing Company. He was a member of the A.S.M.E. and a 32nd Degree Shriner as well as Knights Templar, a member of the Torrington Club and other local institutions. He retired from business in 1957 when he moved to Westport.

You may be interested in the fact that **Charlie Fiske** seems to be doing all right and has given up his cane. The Dinsmores, stopping on their way from Maine to Ohio, were the guests, as were your secretary and his wife, at an evening dinner party with Charlie at his Bath home late in October. A good time was had by all—which is an understatement. As you

read this Charlie will be wintering in Barbados. . . . **Israel Lovett**, who for a number of years has been a professor at the University of Missouri, officially represented M.I.T. at the inauguration of Merle Baker as new chancellor of the University of Missouri on November 6, 1964. . . . New addresses are at hand for **Thorn Dickinson**, Course I, Hotel Woodward, Broadway at 55th Street, New York, N.Y.; also **Lin Faunce**, Course IV, Apartment 4, Regency Drive, Bloomfield, Conn. Also **Bob Townend**, Course X, Apartment 3B, 41 Elm Street, Morristown, N.J. In Bob's letter he anticipates the experience of living in an apartment without the burden of shoveling snow, etc. We have got to see him and show him how we live all year round here in Maine without shoveling snow either. Bob also passed along a new address for **Bill Simpson**, 3890 Boone Street, San Diego, Calif. 92117. . . . Dinny gave us a small clipping from the Wall Street Journal some time ago. It is entitled "At the Class Reunion": "Although I admit I have slowed up a bit, and I'm far from the sprightly and spry age, it comes as a shock, and it's hard to believe These decrepit old fellows are my age." (Stephen Schlitzer)

Or do you believe as **Harold Bent** writes he does in a nice letter I had from him not too long ago. After bemoaning the fact he had missed some of the reunions in the past he says, "I was also impressed by the fine appearance of those class members attending, impressed by their vigor, alertness and wholehearted participation in all of the activities. You know, we're not so old after all and these late years have a lot of advantages and are most satisfying in many other ways." . . . Or is this wishful thinking? Guess we'll stop the speculation while we're still ahead.—**Herman A. Affel**, Secretary, Rome, Maine, Mail: R.F.D. 2, Oakland, Maine; **R. P. Dinsmore**, President, 9 Overwood Road, Akron 13, Ohio; **C. H. Chatfield**, Assistant Secretary and Alumni Fund Class Agent, 177 Steele Road, West Hartford, Conn.

'15

Happy New Year with the hope you and your families have all enjoyed a pleasant and comfortable holiday season. Only six months to our 50th. In all our lifetime we can have only one of these reunions. You'll be there, of course! How about it? By now you've received the "Hold On" flier and many of you have heard from that loyal band of course representatives who are stirring up the fellows in their respective courses. Through the courtesy of the trustees of the Isabella Stewart Gardner Museum in Boston, the ladies of the Class and their guests will be invited to a guided tour of the museum followed by a concert. After the concert the ladies will be invited to tea in the Dutch Room as guests of Mona and **Clive Lacy**. This will be on Saturday afternoon, June 12 at two o'clock. Many thanks to Mona and Clive for their generosity and interest in set-

ting this up. . . . The annual New York Class dinner will be held at the Chemists' Club, 52 East 41st Street, Friday, January 29 at 6 P.M. Again **Larry Landers** and **Bur Swain** are setting this up for us in the usual way that makes this such a successful and enjoyable evening for us all. An extra large contingent is going from Boston for this, so let's all be there to make this a banner evening with final plans for our 50th. The annual report of the 1964 Alumni Fund shows 1915 up there with top leaders thanks to the devoted work of Max, Clive, The Pirate, Bill Spencer and Phil Alger, all of whom worked on the Fund. Forty-four per cent of our class donated \$7,705 for an average of \$69 per donor. Keep it up and let's make that even more this year. You'll be hearing from **Ben Neal** on final plans for our 50th Reunion Fund.

Herb Anderson writes from Philadelphia: "I enjoy reading our Class News. (Thanks Herb.) While I have been in the process of retiring from business for some years by cutting down to 10 or 11 hours a week over three days, I have now finally eliminated even these few hours. Once a week I will continue to attend a bank meeting, where I am on the board, but that will be all. Between living at our place in the country and traveling to be planned, I hope to condition myself for our 50th Reunion." Good for you, Herb. We'll all be glad to see you again and be sure to bring along a full repertoire of stories. . . . We are sorry for **Alton Cook**, V, in the sad loss of his wife on September 1, after a long illness. Alton had a tough summer but is now back at business. . . . **George W. Simons**, XI, of Jacksonville, represented M.I.T. at the inauguration of Robert H. Spiro as president of Jacksonville University on November 20.

With glowing editorials and obituaries from the Salisbury papers, **Maurice Brandt** wrote this splendid letter about **Ed (Phoebe) Proctor** who passed away there on March 29: "Some time ago it became my sad duty to represent our class at the funeral services of our classmate Ed Proctor. I am enclosing, for the class archives, the newspaper announcement and editorial covering it. Shortly after moving here to Salisbury in 1947, I called on Ed and had a very pleasant evening. Ed then lived in a large house some five blocks from the center of the city, while we lived in the country so I did not see him often. He was most cordial and offered to introduce me around. Although we moved into the city in 1952 I saw him only occasionally. About 1958 he built a large, beautiful chateau-type home. In 1962 we built one and one half blocks away and I saw him more often. He told me how when he started up he bought the various materials in five gallon lots and, with the ever loyal help of his charming wife Lucile as his secretary, made his start. Within a few years he was buying his materials in railroad tank cars and doing a tremendous business—truly a remarkable record! A few weeks before his death he took half a day to show me and explain his plant which took in over half a city square block—it

astounded me! Several modernly fitted offices, five laboratories (one for each of several types of work), very large storage tanks, his own trailer tank trucks for making deliveries, and a large number of stainless steel reactor tanks 10 to 15 feet in diameter and up to three stories high! Many million dollars worth of equipment. This visit made me mighty proud of what our own Ed Proctor has accomplished. Ed was well liked and respected by the leading men of Salisbury, and a devoted churchman. At his services in the commodious Episcopal church, there was not a vacant seat. The genuine loss people felt at his passing was reverently manifest. He was indeed a fine man and a good friend. He will long be remembered."

At the Alumni Officers' Conference at M.I.T. in September, **Bob Welles** was awarded a Bronze Beaver in recognition of "exceptional service to M.I.T. and to its Alumni Association." Bob has been regional chairman of the Los Angeles Educational Council, Alumni Fund, and a leader of the M.I.T. Club of Southern California. And I will add to this citation, a loyal and generous supporter of '15. We all congratulate Bob on this richly deserved reward and honor for his devoted interest and work for M.I.T. and the Alumni Association. . . . On a picturesque card from Venice, Marion and **Vince Maconi** told about their long and exciting European trip this fall. They returned just about in time to go to Florida for a winter of golf—ah, me! . . . With a check to Ben Neal for our 50th Fund, **Mary Plummer Rice** wrote from Paris: "Winter came with a rush this week—and caught the Columbia architects—and engineers—delayed in their plans for Reid Hall—American efficiency is not the same—or understood!—here in France. Changing from coal heating to oil leaves us with no heat and it must be down to 40 degrees today. Luckily I've had a long apprenticeship with Boston and San Francisco winters—but classrooms all week—a U.S.O. Saturday and Sunday afternoons are a haven of warmth! Best wishes to you both for a warm winter." Now, here's a devoted classmate for us all to admire and follow. It certainly will be pleasant to see Mary at our 50th. . . . So, only six months to our 50th. Are you going to be there? How about it?—**Azel W. Mack**, Secretary, 100 Memorial Drive, Cambridge.

'16

"And a Ha-a-a-p-p-y and Heal-l-l-thy New Year" is the message from our still-skiin' president **Ralph Fletcher** from somewhere in the hills of New Hampshire. And he goes on: "Put it on your calendar in ink that the 49th Reunion in June is the No. 1 item in the year of 1965." And speaking of reunions we are still getting comments on the 48th Reunion picture that read like this: "Looks as though it was a happy reunion—we now expect to be at the 49th in June as well as at the 50th next year." . . . An October news release indicated that the

American Heritage Foundation, of which **Steve Brophy** is president, was taking on another vital program even before its "Register and Vote" campaign was finished. "Very exciting, too!" says Steve. The release states: "Concerned by political apathy among young voters, a group of prominent educators and laymen have formed the Joint Committee on Civic Education to work for up-grading civic education programs in the schools throughout the nation. A two-year 'groundwork' program initially of a size of \$1,000,000 has been planned. . . . The American Heritage Foundation, according to its chairman **Alfred E. Perlman** who is president of the New York Central System, 'will perform the roles of co-ordinator, catalyst, and sponsor of the combined group known as the Joint Committee on Civic Education.' Well known for its sponsorship of the 'Freedom Train' in the late 1940s and for the 'Register and Vote' campaigns it conducts every two years, the nationally recognized, non-partisan, public affairs agency will also play a vital role in interpreting the educational programs to the public." One of the causes of concern cited is this: "Young people in the 21 to 29 age group typically show themselves to be the least politically active age group in the national electorate, despite the fact that each generation has more formal education than its predecessor."

On September 1 **Blythe Stason** resigned as administrator of the American Bar Association in Chicago and accepted an emeritus professorship in Vanderbilt University School of Law, Nashville, Tenn. He notes: "After five taxing but rewarding years in Chicago, it is great to be back to the teaching, research, and writing that have meant so much to me over the years. Also I'm glad to leave behind the windy blizzards of Chicago in favor of the sunny southland." In August and September he was in Geneva, Switzerland, as the representative of the Fund for Peaceful Atomic Development, of which he is the managing director, attending the third International Conference on Peaceful Uses of Atomic Energy. He says: "Our classmate **Bob Wilson** was there, but he was hospitalized before I had an opportunity to see him. He was a great man and his departure is a great loss." Letters from classmates express a great loss in Bob Wilson's passing. Before leaving on the trip to Europe Bob said to one of the AEC men that he wanted to live long enough to see the "private ownership" bill signed. In this connection we quote from a letter from Pearl Wilson: "President Johnson signed the bill less than a week before Bob was stricken. Dr. Seaborg asked President Johnson for one of the pens which had been used for the signing, so he could give it to Bob. Bob knew Dr. Seaborg had the pen and was so pleased about it, but he never saw it, alas. It was delivered to me shortly before I boarded the plane to fly home. Private ownership of special nuclear materials was Bob's chief project during his four years of service on the Atomic Energy Commission." And the September 11 issue of Time magazine had this to say: "Winding up his stint as

an AEC Commissioner, Wilson got a grateful letter from President Johnson: 'Your outstanding performance and the high esteem with which you are regarded as a scientist, a businessman and a public servant must be a source of satisfaction to you as your years of public service come to an end.' . . . **Rudi Gruber** says he returned in October to a mountain of paperwork after four months in Europe. He was deeply honored on receiving the following from M.I.T. Vice-president Vincent A. Fulmer, '53: ". . . It is my privilege to welcome you as a member of the Corporation Visiting Committee for the Department of Modern Languages for the next two years. . . ." Rudi hopes the working schedule fits his "itineraries." . . . We had a telephone visit with **John G. Fairfield** as he visited **Jim Evans** in Fair Lawn, N.J. John continues teaching thermodynamics one-quarter time at Rensselaer, and also, as he says, he spends time tending his apples, peaches, plums, and grapes. To us of Course VI, thermodynamics was "ugh!" with its "somewhat totally incomprehensible" concept of entropy—was it $\int dh/T$?

Nary a person can talk about the history of computers without mentioning **Van Bush**. And so it is in an article "Computers Come of Age," published in News Front, August, 1964, which reads: "In 1925, Vannevar Bush, then professor of electrical engineering at the Massachusetts Institute of Technology, designed and built a successful differential analyzer. This first large-scale computing machine solved lengthy and intricate differential equations in a few minutes." . . . Jim Evans tells of some of the troubles the **Vertrees Youngs** encountered in June getting through New York City on their way to Hartford—baggage and porter troubles, and "35 smackers" for a hotel suite, claimed to be the only thing available. Others have had like comments during those busy weeks of the World's Fair! We have circulated some chapters of the Second Young Safari Letters (1963) by Sylvia Young, and from time to time have noted some of the comments of pleased readers. Here are some of the latest. **Stew Rowlett** writes: "Extremely interesting. Should appear in book form!" **Emory Kemp** says: "Very interesting to Ruth and me due to the fact that our minister at Wellfleet, Mass. (Congregational) spent 20 years in Pretoria, South Africa, came from England, and we had seen many colored films of Pretoria and surrounding places, of the Bantu tribes, etc. Our minister, Mr. Heap, had charge of about 400 churches in South Africa and he came directly to our church from Africa. A wonderful preacher and he preaches without notes or looking at any writing." **Hovey Freeman**: "What a fascinating way to spend one's retirement. Makes me very jealous now that I am retired and trying to get used to it." **Irv McDaniel**: "This is our next trip. From Gibraltar via Anchor—Castle Line—eastbound—get off at Kenya with car—rejoin another ship two months later at Capetown? Sylvia's writing cinches it!" . . . Pearl Wilson: "Sorry not to get this out more promptly but

it arrived the day after I returned from an eight-day trip, a portion of which was spent at Wooster visiting Bob's grave and ordering a monument for it. Am writing the Youngs." **Arvin Page** wrote: "Extremely interesting but the emphasis on the 'cold' temperature indoors effectively prevented my feet from itching." And **Obie Pyle**: "These folks seem to lead very happy and interesting lives. Best regard and wishes."

A card from **Jap Carr** in October brings news of other '16ers: "We had the pleasure of meeting with Ke and **John Ingle** in La Jolla, Calif. (his new address is 1611 Del Mar Avenue, La Jolla, Calif.). Then he drove us up to this place (The Tennis Court, The Inn, Rancho Santa Fe, Calif.) and Irv and Katherine McDaniel drove down from Newport Beach to have cocktails and dinner with us with much reminiscing of Tech days in the Far East." Jap and Hildegard were on their way to Honolulu for a month. . . . And **George Maverick** writes: "Ruth and I are back home in San Antonio acting the part of tourists attending a meeting of the National Trust." They left Virginia by car early in October to attend the marriage of a granddaughter in Westfield, N.J. Following that they visited in Indiana, California, Arizona, and New Mexico before reaching San Antonio, taking turns at the wheel all the way. George concludes: "Now we look forward to the day next week when we drive in the gate to the familiarities of Shepherds Hill Farm," in Charlottesville, Va. . . . **Ken Sully** reports from Arcadia, Calif., that all is well. He has had several trips to San Francisco visiting friends, and expects to fly to Cleveland for Thanksgiving. As for the reunion picture he says "it was good to see the '16ers if only in print."

We all miss the exciting travel letters we used to get from Irv and Kay McDaniel, now that they have become settled folks in Newport Beach, Calif. But we do have on hand an interesting bit that Irv sent us some time back about the grand old sport of baseball, sent because we indicated we were still a loyal, unchangeable Red Sox fan. Irv says that when he went to Tech, the Red Sox were having their first World Series since 1898. He had a letter from his next door neighbor in Los Angeles (Mayor of Los Angeles) to brother Jim in Boston. And: "Jim fixed me up for all the games and then gave me a box (seating eight) behind the home plate all the time I was at Tech. The first summer I had to stay for summer school (Math, thanks to Professor Passano) and when the Red Sox were home I lived with them at Revere Beach. I got to know them very well—my hero was Duffy Lewis." Further: "They taught me inside baseball and their signals. One day when my check from home was late, I went to the first base bleachers, and took all I had, \$2.00, and ran it up to over \$300.00 on sure things (I knew the signals). Did it worry me? Not a bit. They were all professional gamblers and I was their sucker! George Sisler and Zeb Terry (White Sox) were Dels and always stayed at our house when in Boston." Irv says he spent a month in 1939

in the Rockies with "Branch Rickey and Paul Hoffman (also Delts) and every night Branch would regale us with baseball stories, especially about the Dean boys. Did you know there were three? Homer was the third. But my first real hero was Rube Waddell—ever hear of him—who spent two to three years with the Angels when they were about Class C league. I saw the game when in the ninth inning he ordered all his team off the field and then struck out the three batters. I also saw him make a triple play, unassisted, caught a line drive, touched second (out No. 2) and the runner from first ran into him. Also saw Babe Ruth hit the longest home run in history over the center field wall in Fenway, into an open box car headed for Albany, where it was fielded. Can I qualify for your Gas Stove League?" Sure can Irv!! We will never forget the buzzing of bets in those bleachers in Boston!

We have word from **Barney Gordon** (still totally active as president and treasurer of MKM Knitting Mills) who notes that "Ruthie has really been living up to her promise and has reminded me several times that I should send along a few lines." He has an interesting comment on present-day education: "Isn't it amazing the progress that is being made nowadays in the world of science, medicine, and education? I have seven grandsons, two of whom are at Phillips Exeter Academy, and it is most astonishing to see the advancement into scientific subjects and the enrichment of the entire school program in preparation for college. Sometimes my grandsons delight in problems and they are surprised when I come up with the right answers—thanks to good old M.I.T. . . . I know how keenly we '16ers feel about the passing of dear Bob Wilson, who was really loved and admired by all his classmates and the world at large. We will all miss him."

Arvin Page, in Winston Salem, says that for the past 17 months he has done very little except to fight his arthritis. This provides such a full daily schedule he has "little time for extracurricular activities." Mornings, for example: "By the time I have taken my exercises in the morning and have gotten my joints loosened up a little bit it is time for lunch." And he catches us up on something—we wrote: "Be sure to come to the reunion in '64" and he replied: "Old age must be creeping up on you too!" No comment! . . . In Buffalo **Ray Brown** tells of having dinner with the **Eric Schabackers** when they were passing through town, and having lunch with **Bill Leach** near the end of September; "this about covers my contacts with '16ers lately." Ray says Niagara Falls is becoming very active in tourism. He notes: "The staff of the city Tourist Information Center is made up entirely of volunteers—quite a few are retired men. I worked several hours per week for a while. No '16ers showed up so I couldn't use my deluxe tour." . . . The **Henry Shepards** announce the arrival of a new granddaughter bringing their total to eight grandchildren. Summer was spent in the summer cottage in Randolph, N.H.—"swimming, hiking, and

just taking in the view." Henry says his 1913 Chalmers Pon Tonneau "required a complete rebuilding and is not yet finished. All ball and roller bearings were badly eroded due to acid in the oil and grease." He hopes for a ride in it before the snow flies but has his fingers crossed. . . . **George Petit** continues his consulting work on trend analysis, and it is fascinating to read the explanation of his method which he finds so effective on a probability basis. His basic philosophy deals with the problem of identifying the probable beginning of major turning points, not with predicting how long a trend, already in progress, will continue. As we have noted before, he deals with data and results, and his consulting relates not only to business economic reviews, but to the rallies and slumps in a baseball team's performance.

Gene Lucas is now (November 8) making good progress after his bouts with a respiratory infection. Di says he looks fine and "although held down by his doctor's strict routine in which his beloved golf does not figure at present, he is looking forward to a much healthier year and the chance we can be with the '16ers next June." . . . And **Phil Baker** too, according to **Thelma**, is now on the road to recovery after a hard session with pneumonia and complications. Two weeks back, Phil mentioned in a note to Jim Evans, he was "getting the rubber out of his legs daily, a little at a time." . . . **Hank Smith** tells of becoming a member of the Old Guard of Summit, N.J., and finds the new contacts most interesting, even though there are very few M.I.T. men in the organization. He attends most of the meetings of the Tech Club of Northern New Jersey, but here again he hardly ever sees a '16er. The Smiths planned to be in LaGrange, Ill., on Thanksgiving and in Hollywood, Fla., for two weeks or so this winter.

In late October **Ed Williams** wrote from North Falmouth that Cape Cod was again a nice quiet place to live in after the summer crowds had left. He said: "I am home only a few weeks after a sojourn in our new little Falmouth Hospital, but feeling better all the time although much restricted on visitors. After the bad weather we experienced in Florida last year we have decided to stay right here at home this year and enjoy the snow and cold." That is smart, if we are permitted to say so, for we do the same thing, "enjoy the snow and cold", in northern New Jersey. Ed adds: "I share the sorrow of the whole class in the passing of Bob Wilson—the world needs men like him so badly."

Shatswell Ober is one of our reliables; definition of "a reliable": one who always responds to our requests for news bits. This time he has four unclassified items, two of which follow. "Item II: Unfortunately, all that I am able to contribute is humdrum. I am no longer a part-time lecturer in the Aero Department at M.I.T., but I do still participate in various academic activities. However, I cannot regale you with tales of interesting travels because Route 2 from Cambridge to Arlington is about all I see. Item IV: In the reunion picture, the men

do not look as young as in 1916. The girls do somewhat better." . . . **Herb Mendelson** was in the October issue of the New York Times under the heading "Group Protesting East 64th Street Tunnel". It reads in part: "The chairman of a neighborhood group protesting a proposed subway tunnel under 64th Street said yesterday that community residents were virtually unanimous in opposition. Herbert Mendelson, chairman of the Emergency Committee to Stop the 64th Street Subway, said that 'so many people want to serve on our committee I don't know what to do with them all.' His group is protesting a Transit Authority plan to blast a tunnel from Queens under the East River passing under 64th Street to the West Side." . . . This concludes the little old column for this month. Soon we'll be having detailed announcements from Ralph Fletcher telling all about the preliminaries, plans, and proposals for the 49th Reunion (how did it ever get to 49?) on the Cape in June. And just a word of appreciation for the way you have been answering calls for bits of news and philosophy for the class column. Write a little but write often.—**Harold F. Dodge**, Secretary, 96 Briarcliff Road, Mountain Lakes, N.J.

'17

In this issue, we salute 1965, which, in June will spark the celebration of our 48th year since graduation. Here's a toast to the good health and happiness of yourself and family for the entire year. Do you mind adding one New Year's resolution to your list? Make your contribution to 1917 class notes to give the same pleasure to your class friends as you get from reading about their experiences. Three suggestions are offered: (1) a review of your 47½ years as suggested in the questionnaire sent out last August; (2) a review of interesting holiday or vacation travels; (3) interesting happenings not related to (1) or (2). . . . Your secretary and his wife are "back in the running" after a very pleasant one month's trip to Egypt, Lebanon, Syria, Jordan, Israel, Greece, and a one week's trip on the 'Stella Solaris' among the Greek islands up to Istanbul and return to Athens. We are sorry to have missed the interim fall reunion at Manchester, Vt., that **Dix Proctor** wrote about in the December notes. If notes get scarce, I may inflict on you a "blow by blow" description of the trip.

Thorndike Saville of Gainesville, Fla., claims to be a member of the class of 1917 only by accident. He received a B.S. from Harvard, another from Dartmouth, a civil engineering degree from Dartmouth, and a master's degree from both Harvard and M.I.T. In September 1964, he received the following citation: "For his inspiring leadership in engineering education and in related professional practice, and upon the recommendation of the Honorary Membership Committee, the Board of Directors has elected Thorndike Saville an Honorary Member of the American Society for Engineering

Education." He has received honorary doctorates from Clarkson, Syracuse, and New York University. Among the awards conferred upon him are the Lamme Medal of the American Society for Engineering Education, the 75th Anniversary Medal of the American Society of Mechanical Engineers, honorary membership in the American Society of Civil Engineers, and Decoration for Distinguished Civilian Service from the Department of the Army. . . . **Joseph B. Wirt**, of Wheatland, Calif., who attended Course X, but did not graduate, is reported deceased. . . . Evidently life begins at 70 for **John M. Batschy**, who was at M.I.T. in 1916-1917 and received a degree of S.M. in architecture. A Clearwater, Fla., news item in August states: "John M. Batschy, designer-illustrator, has joined the firm of Design Consultants. Batschy has been employed to do all architectural presentations and artist renderings for clients. Batschy is recognized throughout the country as an outstanding silhouettist. His landscapes, seascapes, birds and flowers, all a continuous cutout which can be picked up at any place on the border as a single unit, have been exhibited throughout the eastern seaboard. During World War I, he spent two years in France and Germany on General John J. Pershing's staff. Following the war, Batschy's work in Nebraska included architectural designs for several banks, a \$3 million technical school, Masonic Temple, office buildings, and residences. Prior to coming to Florida, he spent nine years in New England renovating stately, century old residences and the knowledge gained there was the basis for his authentic Early American and Colonial designing."

The following notes were received by **Dix Proctor**, emcee of the interim fall reunion at Manchester, Vt., from various members of the class. **Frank Peacock**: "I have just returned from a month's vacation going from Yellowstone to the Grand Canyon. I was officially retired 16 months ago but am still busy." **Ken Bell**: "As we go to Peru again to visit our children, this month (October) we can't make the interim reunion." **John M. Mertz**: "Sorry I can't make the reunion, I am a patient in the Golden Acres Nursing Home, Wilmington, Del." **Earl C. Lewis**: "I am teaching at the Lynn Vocational High School." . . . The following note is from **Bill Dennen**: "We spent last winter in Mexico, as usual, returning to the farm in Scranton, Pa., in mid-April. In mid-May we returned to Mexico City by rail to attend the double wedding of the daughters of Clarence Cornish, '24. We spent the summer at the farm entertaining our grandchildren." . . . The New York City class luncheon on November 5 brought out **Joe Littlefield**, **Bill Neuberg** with his son-in-law, Admiral Sullivan (who by the way, is having his biography written by Columbia University in behalf of the U.S. Navy covering his experiences), **Dick Loengard**, **Bill Hunter** and emcee **Dix Proctor**. **Dix** says that he appreciates telephone calls or letters from those in the New York area who receive notices of

the luncheons but cannot attend. . . . **Ray Blanchard** is reported to be making good progress in his recovery from his stroke last fall. He apparently brightens up noticeably when a goodlooking nurse comes into the room.—**W. I. McNeill**, Secretary, 107 Wood Pond Road, West Hartford, Conn. 06107; **C. D. Proctor**, Assistant Secretary, P.O. Box 336, Lincoln Park, N.J. 07035.

'18

Castor Canadensis, more familiarly known as the beaver, is a remarkably intelligent and industrious animal, continually underrated in the magnificence of his actual achievements. Ask the ordinary person how big a tree the dental equipment of this, the largest of aquatic rodents, can gnaw down. Then reflect that the record, as far as I have been able to learn, is a tree somewhere in Vancouver, 39 inches in diameter. For a little fellow with a body two-feet long, that's quite an achievement, and so is the winning of the M.I.T. bronze beaver. So far, only 18 have been awarded—one to our **John Kilduff**. And, as seems appropriate, the award does not serve in a rite of quiet recognition for years of service as a class scribe. Its function is to impart to the brethren a loud crash of timber when some division chairman has successfully shaken the money tree in the interest of continued financial sustenance for the Institute. John worked hard for his beaver, is proud of having it, and we are proud of him. . . . **Marshall T. Sanders** of Course X has retired from Atlas Chemical Industries, Inc., after 47 years of gnawing away at their problems. Since joining Atlas in 1917 he has held several managerial positions in both the chemical and explosive divisions. During the first World War he worked in the ammonium nitrate plant at Perryville, Md. From there, more power to him, he went to the Forcite dynamite plant in New Jersey. In 1934, always trying to get at the butt of the tree in bringing down a problem in order to strengthen his understanding, he became the first director of the Darco Experimental Laboratory which was an adjunct to the company's activated carbon plant in Marshall, Texas. From there, in 1945, he was named director of the newly formed Chemical Engineering Department. By 1959 he was eligible for retirement, but leaks in a few dams kept him on as technical assistant to the executive vice-president, until now he has reached the Biblical allowance of three score years and ten. Now he can look back to Ireland where he was born and spent the first nine years of his life, look back to his four years at Washburn College in Topeka, Kansas, and look back to the time he was with us until the war fragmented many plans and many lives. He is a member of four professional societies ranging from the American Institute of Chemical Engineers to the American Society of Quality Control.

Ralph J. Crosby, who decided to become a beaver while in the Hartford (Conn.) High School, is the assistant vice-

president of Marsh and McLennan, Inc., New York insurance brokers. During the war he was a fleet engineer officer in the Navy, which, by those mysterious channels which lead us from one stream to another in the ever changing currents of life, has resulted in his recently addressing an Albion Malleable Iron Company management meeting in Michigan on the subject, "Appraising the Supervisor's Participation in Safety." According to the photograph in the Albion Evening Recorder, he still has that luxuriant growth of hair we used to admire in the Engine Lab, and he has even developed, through the seams of the marks of character, a much more comely countenance than was his in those ancient youthful days. The newspaper goes on to say that in addition to his loss-prevention duties with Marsh and McLennan, he was an instructor to the United States Army for 16 years on accident prevention, and has been a member of the New York University center for safety since 1942. Ralph is a member of the American Society of Safety Engineers and has been actively engaged in accident prevention work for many years. He spoke at the Michigan Safety Conference in Lansing last spring, and has spoken to the National Safety Conference on several occasions. Beavers are quick to sense trouble, and to set forth with great urgency to repair damage before a catastrophe takes place. . . . Your amanuensis has recently lectured in Providence on his book, "Amos Fortune's Choice," and has been asked to head the Social Science Department at the little college where he travels toward the far horizon, still in the old, familiar, and cherished harness of a classroom with the young. . . . **Dr. Arthur E. Burke**, who started out to become an architect but ended up as a physician, has felled his last tree. He died last September, probably in Ayer, where he made his home. No further details have reached us. Doubtless, he was grateful for a busy life. As the dusk gradually quenches the golden sunlight with dust, we should all be glad to have been busy as beavers, to have gotten our teeth into a few problems bigger than the little saplings growing on the banks of life's stream, and to be unafraid as we listen for the silent music of the falling stars.—**F. Alexander Magoun**, Secretary, Jaffrey, N.H.

'19

The class had a dinner on October 14 at the Roger Smith Hotel in New York. Plans were discussed for the next reunion in June, 1966, and our 50th Reunion in 1969. **Paul Sheeline** will head the committee for the 50-Year Reunion gift to M.I.T., and all the next five annual Alumni Fund gifts will be included in the final gift. Through the courtesy of **Buzz de Lima**, we held the dinner in his pent-house suite. Don Way, Will Langille, Jim Strobridge, Paul Sheeline, Phil Rhodes, Leo Kelley, Jack Braverman, Edmund Flynn and Gene Smoley participated in a wonderful evening. Your secretary had regrets from **Adolph Muller**, who was out of town; **Pat Paterson**, who gave a paper in Lenox, Mass., at an

A.S.Q.C. convention on October 15; **Albert Mayer**, **Tim Shea**, who was abroad; **John Hanson**, who was on a trip in the New England states; **Tom Goodwin**, who was out of town but is still with Con Edison and retires February 1, 1965; **Paul Blye**, who was on his annual foliage tour in New England; **Al Reynolds**, who does not undertake evenings in New York but would love to see the boys; **Ted Shedlovsky** and **Lester Wolfe**, who could not make it at the last minute. Also Russell Palmer, Ralph Gilbert, Marshall Balfour and Charlie Parsons. **Bal** had a trustees' meeting on the 14th and left for Tokyo on the 15th. Russ was held to the post, not wanting to leave his 94-year old mother alone that evening. **Charlie Farist** could not get away from Cheshire that evening. His new address is 24 Patton Drive, Cheshire, Conn. **Ralph Gilbert's** home address is 238 East 31st Street, Brooklyn 26.

Benjamin Bristol, Chairman of the Board of Directors of the Foxboro Company, Foxboro, Mass., was made an honorary member of the Instrument Society of America at their 19th annual conference in New York, October 12-15, 1964. "Looking back over his long and successful career with the Foxboro Company, Mr. Bristol believes his primary contribution has been in establishing and maintaining a close and understanding tie between management and research and development. Under Mr. Bristol's leadership as president, Foxboro introduced the first all solid-state electronic control system. Mr. Bristol played a key role in introducing electronics as a medium of process control. Mr. Bristol led Foxboro's development of a pyrometric line for high temperature work and a potentiometric line which was to prove its value in analytic measurement. Active in civic affairs, he is also president of the board of trustees of the Norwood Hospital, a director of the Sentry Company and Massachusetts Electric Company, and president of the Foxboro National Bank." Your Secretary ran into Ben at Chatham Bars Inn early in October. I noticed that Ben still keeps up his health and posture by getting in a round of golf.

Eugene Mirabelli was written about in the current Civil Engineering as follows: "Eugene Mirabelli, although he just became professor emeritus of civil engineering at M.I.T., will continue his teaching career on a part-time basis as lecturer. After a brief period in industry, he became an instructor in civil engineering at M.I.T. in 1920 and associate professor of civil engineering by 1938. An active consultant on numerous local building projects, he was on the study group which established the last uniform state building code for Massachusetts."—**Eugene R. Smoley**, Secretary, 30 School Lane, Scarsdale, N.Y.

been so prompt, favorable and generous that we can predict with certainty a most successful and enjoyable gathering of the class—the finest reunion ever in all probability. So do plan to come if you possibly can. . . . Welcome word from **Dusty Miller** of 1833 North 13th Avenue, Phoenix, Ariz., reports a recent trip to New Zealand, Australia and the Pacific islands. Dusty has retired after 31 years with Johns-Manville, four years in electrical equipment distribution. He keeps active as travel director for the Arizona Automobile Association and as head of a household consisting of one wife, two daughters and four grandchildren. He hopes to attend the reunion. We sure hope so, too, Dusty. . . . Another **Miller, R. A.**, reports retirement from Bell Telephone in 1963 and home in Little Silver, N.J. . . . **Harold Bibber** writes to say he has just retired as professor of electrical engineering at Union College in Schenectady. His plans for the coming year have not jelled as yet but he contemplates some travel, hopefully including a trip to reunion. . . . **Ming Pai**, whose change in occupation and location was mentioned in the November news, now has established an address at 1545 19th Street, N.W., Apartment 616, Washington, D.C. . . . **John Barker**, who retired this year from his post as director of the Maine Medical Center in Portland, has been named chairman of the Christmas Seal campaign in Cumberland County. His home is at 33 Runnello Street. . . . **Bat Thresher** was quoted in a recent article in Look magazine on "How They Got Into College." Bat wrote: "No candidate is ever a 'sure thing.' Conversely, none, however, unpromising, is completely devoid of hope; some who looked quite undistinguished at entrance have performed brilliantly." As we all know, Bat performed brilliantly as Director of Admissions at the Institute, but he looked the part, "distinguished."

Dozie Brown, of 7635 Holmes Road, Kansas City, Mo., reports that his daughter, Nancy, is married and living in Denver and his son, Charles, is a lieutenant in the Navy and legal officer aboard the 'U.S.S. Enterprise.' He participated in the recent round-the-world operation, 'Sea Orbit, Nuclear Task Force One.' Dozie is pleased that his son, in addition to being a lawyer, qualified for officer of the deck, as he himself held the rank of commander in the Naval Reserve. Dozie retired from engineering two and-a-half years ago. . . . **Fred Earle** of 201 Edgewood Road, Santa Ana, Calif., retired as captain, U.S.N. in 1945. In 1943 he took command of the Long Beach Naval Shipyard with zero employees and left it two years later with 16,000. Fred claims to be an expert lawn bowler. Any others, in the class? . . . **Roger McNear** has moved from Duxbury, Mass., to Tucson, Ariz., address 6731 St. Andrews Drive. Roger and Gladys were reluctant to leave the M.I.T. 'colony' in Duxbury but feel the change in climate will be beneficial.

From the Reverend Albert E. Bates, Director of the Harbortlights Gospel Team of Cambridge, comes a tribute to **Carl Leander** of 145 Whitwell Street, Quincy, Mass. The Reverend Bates cites Carl's 44 years of service to humanity, including the conducting of a the Golden Rule Bible

Class of Quincy, service as city councilor, present membership in the Quincy School Committee and other civic activities that have won recognition for him as an outstanding citizen. Carl's many friends in the class will be pleased to hear those good words about his good works. . . . A thoughtful letter from **Bob Tirrell**, 140 Meadowbrook Road, Englewood, N.J., reports the death of **Frank Lawton** at the St. Lawrence Hospital in Bronxville, N.Y., on November 1 from a rare form of leukemia. Bob and Frank, close friends at M.I.T., married Wellesley classmates and continued close through the years. When he learned of Frank's illness, Bob got the undergraduates of their fraternity, Theta Chi, to donate a large supply of blood through the Red Cross for multiple transfusions. Frank had been retired from Texaco for more than a year. He made his home in Mt. Vernon, N.Y., and left a wife, one daughter and one granddaughter. . . . Bob retired about a year ago, expects to remain in Englewood and plans to attend the big reunion with Mrs. Tirrell. We will all be happy to see him.

The death of **George Manning** was reported in the 'Individuals Noteworthy' section of the November Technology Review. George had retired as head of the Department of Naval Architecture and Marine Engineering and was living in Osterville, Mass. He left his wife and three sons. He had a distinguished career as a teacher, inventor, naval expert and author. . . . Word has been received from Mrs. **Erickson** that **Henry** died a year ago after a long illness. Their home was in East Dennis, Mass. . . . A thoughtful letter has been received from Virginia **Sherbrooke** about **Walt's** death from a heart attack on August 12. Walt was founder and president of the Piping Specialty Company of New York City and his home was at 49 Margaret Street, Staten Island. His son, Wade, was graduated from Cornell last June and is now at University of Arizona for his master's degree. His daughter, Nancy, is at Skidmore. Virginia's letter concludes, "Walt was a great guy and we miss him terribly." That statement is seconded by every single one of his classmates. . . . Another appreciated letter, from Katherine **Marron**, tells of the passing of **Adrian** last June. Adrian was a retired commodore who headed the development and design branch of the Bureau of Ships during World War II and later was manager of the Boston Navy Yard and commander of shipyards in the First Naval District. He was graduated from Annapolis and received his master's degree in naval architecture in 1920 from M.I.T. He held the Legion of Merit, after retirement lived in Charleston, S.C., and left his wife, two daughters and a son. Mrs. Marron proudly reports that her grandson, Stephen Winters, entered M.I.T. this fall. With such a distinguished grandfather, he is bound to do well!

As a result of the reunion mailing, a number of returns have come in from the postoffice. Can any of you enlighten us as to the present whereabouts of the following: Arthur Winebaum, Leo Murphy, Frederick Bocher, Julius Wolozin, Edward Stark, Albert Green, Carl Quastrom, Raymond Coward, Norman Cate,

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By this time, many of you have the information on the reunion, but if by any chance you do not have all the dope and would like it, just say the word (see address below) and it will be forthcoming, pronto. Response to reunion plans has

Donald Williamson, Charles Lawson and Herbert Fairbanks.—**Harold Bugbee**, Secretary, 21 Everell Road, Winchester, Mass.

'21

Happy New Year! More honors and recognition for meritorious services and ability have been showered upon members of the Class of '21. **John M. McClelland** of Pittsfield, Mass., received the Masonic 33rd Degree at the annual session of the Supreme Council of the 33rd Degree of Scottish Rite Freemasonry at Detroit's Masonic Temple. This highest Masonic award represents "outstanding contributions to Freemasonry and dedicated service to humanity." A past master of Mystic Lodge, which he joined in 1925, Mac has been active in the Scottish Rite and headed the Princes of Jerusalem Council in Pittsfield. He is a past president of the Berkshire Shrine Club, a member of Melha Temple, Springfield, and of Collina Chapter, Order of Eastern Star. He has already been honored for his work in Pittsfield and in Springfield. Born in Jamaica Plain, Mac attended Chauncy Hall School and was graduated with us in Course II. He joined the General Electric Company in Schenectady, N.Y., and transferred to the Pittsfield plant in 1923. He retired a year ago as manager of installation and service engineering on transformers. He is a registered professional engineer. A member of American Legion Post 167 in West Roxbury, he was a private in the S.A.T.C. at M.I.T. during World War I. He is a charter member of the Stanley Club. Mac and Mrs. McClelland make their home at 89 Stratford Avenue in Pittsfield. They have a son, John, Jr., of Rockville, Conn., and five grandchildren.

An honor to **Edmund G. Farrand** and another important "first" for the Class of '21 are both related to Ed's selection as the first Class Estate Secretary for the Institute. Typical of Ed's love of action and his loyalty to Technology are his immediate start on his new duties, following his appointment during the September Alumni Officer's Conference in Cambridge, and his recent return to the campus to set up a detailed program with the newly appointed Institute Estate Secretary, D. Hugh Darden. The worthy objective of developing deferred gifts from members of the class is in line with the intensified effort to augment Technology's endowment and other long term capital resources. The Institute Estate Office is planning and carrying out a program of bequests, life income trusts, insurance plans and other forms of major deferred giving by alumni and friends of M.I.T. Ed has always been a hard working and most co-operative member of our class "cabinet." . . . A letter from **Raymond A. St-Laurent** (mailed at Digby, N.S., during his recent trip from Bar Harbor to Yarmouth in 'The Bluenose' and prior to journeying through the Annapolis Valley to Halifax and Pugwash) tells of new recognition for **Saul M. Silverstein**. As part of a national effort to expand sales of domestic products in for-

eign countries, Secretary of Commerce **Luther H. Hodges** has appointed **Saul** to membership on the Connecticut Regional Export Expansion Council. The immediate goal is to show non-exporting manufacturers how they may build profitable overseas trade and thus stimulate the long range growth of the U.S. economy and relieve the current unfavorable balance of payments. Saul was one of 10 new members appointed to the regional group, which comprises manufacturers, bankers, insurance executives, as well as representatives of labor, the Chamber of Commerce, state education and development commissions. His appointment recognizes his world wide travel since 1952 in quest of foreign business for Rogers Corporation and his activities as vice-president and director of the Council for International Progress in Management. Another recurrence of the curious coincidental arrival of related Class of '21 news items involved our receipt of a colorful postcard scene of modern and medieval dress in the Great Hall of Bunratty Castle, County Clare, Irish Republic. The legend says those pictured are guests attending dinner in this restored fortress as the climax of a coach tour from nearby Shannon Airport. Dinner is said to be a gay affair, where guests eat with the aid of "fingers and a small dagger, while colleens in period costume sing traditional melodies." Postmarked at the Baile Atha Cliath seaport and county borough of Dublin, the card heralded a hitherto unannounced trip abroad, the third during 1964, with the message: "Hooray for the Irish! Dined here tonight. Regards." It was signed "Sean O'Silverstein."

Our 20th Reunion was held at the Griswold on Eastern Point, Groton, Conn. Twenty-five years later, in June, 1966, we will return to a completely refurbished and redecorated new Griswold Hotel and Country Club, which has been enlarged to utilize 170 acres. Ready accessibility by automobile or private boat as well as by air and train were considerable factors in the choice. Further information will be furnished to you in these columns and by direct mail as the detailed plans and program are formulated, in order that you may arrange well in advance for reservations and travel routes for you and your wife to be present to enjoy another of our reunions. **Melvin R. Jenney**, 45th Reunion Chairman, writes that his committee has been very active. He and **Mich Bawden**, **Ed Dubé**, **Chick Kurth** and **Ted Stefian** have had many meetings. They have done much investigating of available sites and have made comparisons of their features. They took trips in Massachusetts and to the Cape, to Connecticut, Vermont, New Hampshire and Maine, and had temporarily settled on one beautiful motel-type site. Mel says: "There were a couple of things that bothered us, however. One was the necessity for easy transportation for those who would not be driving and the other was hotel facilities. We felt that we would do better at a resort type of establishment. These matters led to the Griswold. We visited it several times and found that it had been completely done over since we were there in 1941. The golf course is very good and so

are all of the other numerous facilities." The general plan of our 1966 reunion will follow the custom of ending on the day before the usual Monday Alumni Day on campus in Cambridge. Transportation will be available from Groton to Boston so that everyone will have the opportunity to visit the modern Technology and take part in the festivities there. The date for Alumni Day, 1966, is now set at June 13 and our reunion will probably extend from the evening of June 9 until June 12.

Munroe C. Hawes, senior partner of the long established real estate and insurance firm of Hawes and McAfee, Inc., of Manasquan, N.J., has requested that his mail be addressed to his home at 320 Boston Boulevard, Sea Girt, N.J. . . . **Ivan C. Lawrence** has reported a change in his Florida retirement home address to 2 Tevin Shores Boulevard, Sarasota, Fla. 33577. . . . **Muriel and George Owens** have completed their semi-annual pilgrimage from their Long Island home to 745 Gertwig Road, P.O. Box 3025, Vero Beach, Fla. . . . **Everett A. Soars** says that he has moved from Beaver Falls, Pa., to a new home at 501-43rd Street, West Palm Beach, Fla. Although he does not say so, we assume that this indicates his retirement. Correct, Everett? . . . **Wilfred B. Sylvester** writes that his home address has changed from West Newton to 116 Church Street, Watertown, Mass. 02172. . . . **Whitney H. Wetherell**, former office manager of the Boston branch office of the Carrier Air Conditioning Corporation, has been made manager of the Engineering Training Department at the company's headquarters, where his address is Carrier Parkway, Syracuse, N.Y., 13201. . . . Writing from his home at 608 Riverbank, Beverly, N.J., **Ralph M. Shaw, Jr.**, who heads the Pedrick Tool and Machine Company in Philadelphia, says in part: "We had a pleasant trip to the Near East. On August 28, my wife and I left on the 'S. S. Constitution' for a cruise. We called at Madeira (my seventh visit to this island); Casablanca, Morocco (my second visit); Gibraltar (my fifth visit); and Palma de Majorca (my second visit). We disembarked at Naples and took the Rapido that same day for Rome. Italian railroads always intrigue me. They were electrified by Mussolini. They use 16-2/3 cycle power, which is one-third of 50 cycles, and do not need special converters as we do to change the frequency from 60 to 25. A locomotive as small as a Cadillac and as quiet as a Swiss watch can take an 18-car Pullman train up to 85 miles an hour and float along like an automobile on a concrete road. American practice is to stamp out the laminations for motor stator and rotor and then assemble them. The resulting air gap is one-quarter to three-eighths of an inch. Brown-Boveri, maker of the Italian locomotives, stamps the laminations oversize and then bores out the stator after assembly and turns down the rotor until the air gap is three-thousandths of an inch. Result, a Cadillac-size locomotive can pull as much as a Pullman-car size. They mount the motors directly on the shafts without gears and use large drive wheels so as to obtain a maximum speed of 100 miles per hour. A 60-car freight will have a locomotive on

each end and one in the middle and will climb a 15 per cent grade with a rack and without any one locomotive 'hogging' all the load. The locomotive is in the middle of an 18-car passenger train, which is equipped with hook-and-eye couplers without any slack. The engineer sits in the front car and operates by remote control. He sets the speed at 80 miles an hour and you roll, leaving Naples at 11:45 A.M. and arriving in Rome at 1:15 P.M., or one and one half hours for 120 miles. The right-of-way is the width of the track plus six feet on either side. You rush through lovely farm land, with the ocean on one side and the Appenines on the other; you dive into a tunnel about three miles long and pop out in a different land entirely; you pass a city that was old when Hannibal crossed the St. Bernard Pass with his elephants and suddenly there is the dome of St. Peters ahead and you have arrived. We stayed in Rome for two days and then hopped off for Greece. Then came a Greek island cruise. We saw Troy (Helen was not there), Crete, Rhodes and Istanbul. And so on to Israel to see the country, a new one for me. The people who live there are pretty nice folks—hard working, honest, friendly and courteous. Next, we went back to Zurich to see our grandson, who is nearly 8, our daughter and son-in-law. We flew back to New York. It was a good trip but I am glad to be home. Regards to you and Maxine." Rufe also says he received an interesting letter from Helier **Rodriguez**.

As we prepared these notes, an itinerary has arrived, covering the South American trip planned by Betty and **Dug Jackson**. Sailing November 7 on the 'Santa Barbara' from Newark, N.J., they made intermediate stops at Cartagena and Buenaventura in Colombia and at Guayaquil, Ecuador. From Cristobal, Panama, they motored across the Canal Zone for a better view of the country and the operation of the locks, embarking again at Balboa. On arrival at Callao, Peru, they proceeded to Lima, where they explored much of the surrounding area and further to the mountain resorts of Chacalacayo, Santa Ines and Chocica; the Inca cities of Cajamarquilla and Pachamacamac as well as the old city of Cuzco and the ruins at Machu Picchu. Next, they sailed from Callao for sightseeing in Valparaiso; traveled to Santiago and took a flight south to Punta Arenas on the Straits of Magellan. Flights back to Santiago and on to Bogota, Colombia, were followed by a trip to Quito, Ecuador, and then to Guayaquil. Late in December, they returned on the 'Santa Isabel' to Jacksonville, Fla., whence they proceeded to visit friends in Ocala and their daughter, Betsy, and her six children in Mt. Dora. About the time you are reading this issue, the Jacksons will be winging their way back to Washington or Baltimore to return to their home at Tetrastemma, Harmony Hills, R.F.D. 1, Havre de Grace, Md. 21078. Thanks for your news, Dug and Betty.

Joseph Wenick can well be proud of his younger son, Martin, who has returned from his first two year overseas assignment as third secretary of the U. S. Embassy in Kabul, Afghanistan. Martin says his stay was very interesting. He served

successively in the administrative section, the consular office and the economic and commercial department. The people were hospitable and friendly. Of the 13 million population, 97 per cent are illiterate. The infant mortality rate is 50 per cent before the second year. The U.S. Government classifies the area as a maximum hardship one for its civil servants, based on health and living conditions, climate and isolation. Martin is undergoing language training for his next assignment to Prague. He speaks Russian and his aim is assignment to the Soviet Union, which he has visited. Martin was graduated from Brown, took courses in Russian at Indiana University, and also studied at the University of California. Thanks go to **Sumner Hayward** for spotting a long feature newspaper story on Martin. . . . In the 25 years during which the Amity Fund has been in operation (you support it under the prosaic name of M.I.T. Alumni Fund), it has served well to aid the Institute, deserving students and many other projects, for which you can take the lion's share of the credit. Our own memory goes back to those early days of being your first Class Agent and writing cajoling letters which were superbly illustrated by **Chick Kane**, '24. Our hat is off to the two who have so ably carried on this worthwhile endeavor—**Ed Farrand** and **Larc Randall**—and, of course, to you for your splendid support over the years. Please help Ed and Larc in their efforts to push the grand total over the goal of \$1.5 million at this quarter century anniversary of the Fund.—**Carole A. Clarke**, Secretary, 608 Union Lane, Brielle, N.J. 08730; **Edwin T. Steffian**, Assistant Secretary, c/o Edwin T. Steffian and Associates, 376 Boylston Street, Boston, Mass. 02116.

'22

While reading of the snows in California today, the middle of November, it was startling to look at Buffalo's temperature of 68 degrees. It is also difficult to withstand the invitations to the golf course based on the urging of "there won't be many more days like this." Of course we can always drop in on Frank Kurtz at Delray Beach for fun and sun. . . . **Willard B. Purinton** of Augusta, an Honorary Secretary, represented M.I.T. at dedication exercises for the new Bowdoin College Senior Center in October. The center houses the College's pioneering program of integrated study and living for the senior year. The three buildings making up the Senior Center provide a variety of living, dining and study facilities designed to make the College's senior year an intellectually stimulating one. . . . **Larrabee D. Hand**, President of Pelham Phosphate Company of Pelham, Ga., has been complimented for his new installation of granulation equipment and for his active participation in the design process. Mr. Hand announced that the product quality has been exceptionally good and control was better than expected. . . . We have good news directly from **Abbott L. Johnson**. He went back to the Columbia Presbyterian Hospital in October expecting surgery but was advised that the improve-

ment shown was so great that an operation was not necessary at that time. He has a few problems as the result of abdominal complications following the hip operation in June, 1963. He swims a mile every morning and rides a stationary bicycle three miles to keep his leg muscles strong. Ab has promised to join us at our 45th at the Wianno Club so that he may receive congratulations on his long awaited recovery. Here's to Ab Johnson from us all. . . . We are happy to fully agree with the Alumni Association and President **Donald F. Carpenter** in its presentation of the Bronze Beaver Award for "Special services to M.I.T. and to its Alumni Association" to our President **Parke D. Appel**. His leadership resulted in the largest class reunion gift in M.I.T. history and the establishment of the Class of '22 Endowed Professorship for Excellence in Teaching. Parke has always worked tirelessly for M.I.T. and the Class of '22. The film "Gateway of India" entered by **Oscar Horovitz** for the Fourth Tokyo International Amateur Film Contest of 1964 received one of the 10 "Fine Work" prizes. The prize and diploma was presented to Oscar's representative during November at the embassy in Tokyo.

Earl R. Thomas, Consultant for Consolidated Edison Company of New York, has received the Walton Clark Medal of the Franklin Institute of Philadelphia. Earl was honored in October with other scientists and engineers of international reputation at the formal "Medal Day" ceremonies. This particular honor is being made "for the conception and development of a greatly improved method for detecting leaks from gas mains and for increasing the safety of the distribution of gas." The 140-year-old scientific organization named to honor Benjamin Franklin is well-known among scientists for its technical journal and its medals which are awarded annually without regard to nationality. . . . We were happy to hear indirectly from **Florence W. Stiles** of North Amherst telling of her work at the University of Massachusetts. Her architectural experience includes houses, power stations and dams, M.I.T. School of Architecture and Library and DuPont's laboratory. Florence looks forward to retirement in the next few years. . . . It was nice to hear from **Bob Tonon** this fall and always most pleasant to visit with him at M.I.T. gatherings. Bob has always been most co-operative and helpful in all class and alumni activities. . . . I have an attractive folder from Radio Free Europe Fund which shows pictures of its chairman, **Crawford H. Greenewalt**, inspecting the various operations in Berlin and Munich together with his Detroit talk entitled "A Businessman Looks at Radio Free Europe." Crawford is continuing his constant effort of good works for others. . . . Among those who have indicated a change of address are: **Colonel Robert S. Barr**, Denver, Colo.; **Charles A. Chase**, Castine, Maine; **Joseph Greenblatt**, Ft. Lauderdale, Fla.; **Joel Harvey**, Portland, Maine; **Francis G. Wells**, Sarasota, Fla.; **John H. Teeter**, New York City. . . . The sympathy of our class is sincerely extended to the families of **Ernest M. Best** of Los Angeles; and **Alfred E. Shaw**, of

Chester, N.J. . . . May all your cold winter days be sunny ones!—**Whitworth Ferguson**, Secretary, 333 Ellicott Street, Buffalo, N.Y. 14203; **Oscar Horowitz**, Assistant Secretary, 33 Island Street, Boston.

'23

Your Vice-president **Howard F. Russell** wrote: "Mildred and I took the month of September off from retirement to make a trip out to Colorado Springs, the Black Hills and various other places. The principal reason for going was to attend a reunion of the 141st Aero Squadron with which I flew in France and Germany in World War I. The Air Force Academy is out here and it surely rolled out the red carpet for us. In addition to the special tour, the real thrills were to be invited into the reviewing stand by the commanding general and his wife, and as guests at luncheon of the cadets who gave us a standing ovation when we were introduced as being among the pioneers of the present Air Force. I was much impressed with the curriculum. In spite of my loyalty to M.I.T. I have a feeling that if I were eighteen over again I certainly would take a good look at the Academy. The way I feel right now I probably would not be able to get into either." Howard's remarks remind your Secretary-Treasurer that he too was a charter member of the Air Corps of the U.S. Army in World War I. I was a member of the 658th Aero Squadron, with which I did not serve as I was on detached duty at Headquarters, American Expeditionary Forces, France. It is quite a step from DH4's to the jets of today and Billy Mitchell's small group of dedicated pilots to the Air Force Academy. Time surely marches on. . . . It would contribute greatly to this column if all classmates would follow the example set this month by your vice-president, who forwarded news relative to three classmates. Mildred's class at the Nashua High School held its 45th Reunion on October 24. She was re-elected vice-president. Howard goes on to say: "Among the letters received from members who could not be present was one, much to my surprise, from our classmate, **Henry Flynn**. Below is the pertinent information copied from it: 'After graduation from M.I.T. I joined Brooklyn Edison in New York and stayed with them until 1927. In 1927 I joined Texaco, Inc. in New York City and was transferred to Texas in 1928. I stayed in Texas at Port Arthur and at Houston from 1928 until 1963 at which time I was transferred back to New York in my present position as vice-president of supply and distribution. My family is composed of three children: Henry, Jr., living in Joliet, Ill., is married with three children; Mary Patricia Kizer lives in Palo Alto, Calif., is married with three children; and Carol Ray Harrell living in Claude, Texas, on a ranch is married with two children. My wife and I are "cliff dwellers" enjoying apartment life at 420 East 51st Street, New York City. We expect to enjoy liv-

ing in New York until my retirement which is not many years off.'

"Perhaps you got a copy of the enclosed notice about the passing of **Frosty Harmon**; it was here when we got back from our trip out West. It is too bad the way the class is thinning out." (Notice of Forrest G. Harmon's passing was reported in the December issue.) Also enclosed in Howard's letter was a letter from **Scott V. E. Taylor**, 7516 Eton Avenue, Canoga Park, Calif. Excerpts from Scott's letter of October 10, 1964: "I am still able to bring my pay check home to my wife. I may even be lucky enough to work until I am 68 as that is the limit for North American; it is more a question as to how long the aerospace and defense business holds out. I had a DeGaulle type operation on Decoration Day from which I am almost completely recovered with no noticeable adhesions and feel much better than I did in April when I was really dragging around. I am still in the same type of work, design specialist in material building, under the tooling department which is rough on schedules, but a little limited on judgment. I have not been able to devote too much time to developing some of my own inventions. I have two in the fire for Rocketdyne under consideration and another one practically thought out, but not yet disclosed. P.S. Give my regards to the gang." . . . Thanks Howard. I hope that this inspires other classmates to send in news.

On returning with Mrs. **McKittrick** from an enjoyable two month's trip through Europe this summer **Bert** found a letter and clipping from **Frederick O. A. Almquist**, who retired as director of the Sanitary Engineering Division of the State of Connecticut Department of Health as of July 1, 1964. He then joined the Boston engineering consulting firm of Camp, Dresser and McKee. His first assignment will be in connection with a contract for construction of water supplies and sewage disposal systems in East Pakistan. A dinner honoring Mr. Almquist was held at the Hotel America in Hartford. Author of a number of technical papers, he was awarded the Dexter Medal in 1946 by the New England Water Works Association for the best paper that year. He received a similar award in 1942 from the Connecticut Society of Civil Engineers. He was awarded the George W. Fuller Award by the American Water Works Association for "outstanding service to the people and the water utilities of the state of Connecticut." A diplomate of the American Academy of Sanitary Engineers, he is a past president of the New England Water Works Association and a member of several professional organizations. He has been president of the Wethersfield Exchange Club and the Wethersfield Business Men's and Civic Association and the Colonel John Chester P.T.A. Fred says he will be located in Dacca, the capital, for a couple of years and will be glad to have any classmates in that part of the world look him up. . . . Geophysics for August, 1962, under the heading "Earth Science Leaders attend GSI Student Conference," states in part: "Oil exploration-

ists, educators, and government officials concerned with earth, oceanographic, and space programs addressed an orientation session of the 14th annual GSI Student Co-operative Plan, June 9-12, at the Marriott Motor Hotel in Dallas, Texas. The 42 speakers covered such diverse topics as marine petroleum exploration, the use of geophysics in lunar exploration, earthquake predictions, modern seismic tools, the world's future demands for energy, underground nuclear test detection, and Navy oceanographic operations. Each year the 15 to 20 college juniors, seniors and graduate students who take part in the program are picked from several hundred applicants. Nearly 300 students have participated since the inception of the plan in 1951. The summer co-operative plan was originated by **Cecil A. Green**, Honorary Board Chairman of GSI (Geophysical Services, Inc., a science services division subsidiary of Texas Instruments, Inc.), and Dr. Robert R. Shrock, head of the Department of Geology and Geophysics of M.I.T. Explaining the aims of the summer co-operative plan, Mr. Green commented: "We hope to generate increased awareness of geophysics as a profession by promoting closer co-operation between industry, government agencies, and the academic world, and to give the student a sense of direction by permitting him to gain actual field experience in geophysical exploration."

The following changes of addresses have been reported: **George W. Bricker, Jr.**, P.O. Box 156, Wilton, Conn. 16897; **Bernardo Elosua**, P.O. Box 360, Monterey N.L. Mexico; **Charles A. Geisinger**, 2914 Cedar Hill Road, Cuyahoga Falls, Ohio 44223; **Luis R. de Luzwriaga**, 145 West 47th Street, New York, N.Y. 10036; **Donald H. McNeal**, Apt. 608, 4320 Old Dominion Drive, Arlington, Va. 22207; **James A. Pennypacker**, Long Hill Road, Essex, Conn.—**Forrest F. Lange**, Secretary, 1196 Woodbury Avenue, Portsmouth, N.H. 03801; **Bertrand A. McKittrick**, Assistant Secretary, 78 Fletcher Street, Lowell, Mass. 10852.

'24

At the annual meeting of the American Society for Engineering Education, **Fredrick E. Terman** received the Lamme Gold Medal for distinguished achievements in engineering teaching, research, and administration. This is one of the highest honors the society bestows. Dr. Terman is a graduate of Stanford who got his doctorate in electrical engineering at M.I.T. in 1924. For years he was dean of Stanford's School of Engineering, and recently has served as vice-president and provost. What we didn't know until this announcement came along, however, is that he is now acting president. . . . We have another president coming up, but in a somewhat different field. **Martin Tressell** was a mainstay of the tennis team as an undergraduate, its captain our senior year. He has maintained his interest in the sport through the years, being active in a variety of organizations.

He has been especially interested in the development of young players. In November it was announced that Martin has been nominated for the presidency of the U.S. Lawn Tennis Association. . . . The Class of 1924 Memorial Fund continues to grow. The most recent addition was a very nice gift from Helen **Wininger** in memory of **Ed**. "This was a big year for the Class of 1924, its 40th Reunion. How Ed would have enjoyed it." He always did enjoy these get-togethers and rarely, if ever, missed one. We missed him. Helen is living in Hopewell, N.J., and last summer all of her children combined visits to her with trips to the World's Fair.

Our western vice-president, **William H. MacCallum**, has been elevated to a new post, that of executive vice-president of Modern Talking Picture Service, with which he has been associated since the Thirties. As many of you know, this company distributes sponsored and educational motion pictures throughout the U.S. and Canada. Through its Modern Learning Aids division it distributes the PSSC Physics Films (which originated at M.I.T.), and the CHEM Study Chemistry Films. Both series are widely used in secondary school teaching. Bill heads this division. . . . Another retiree to report, **Lawrence B. Feagin**, after 40 years with the U.S. Army Corps of Engineers. During this entire time he has worked mightily, and effectively, to keep the Mississippi and its tributaries within bounds. He was a colonel in World War II, and in 1946 received the Legion of Merit. He has headed and served on all manner of committees, but the one we like best was his seven years as chairman of the Potamology Board. For the future he expects to do a lot of traveling and golfing, but there's no mention of violin playing. That used to be his specialty with the Musical Clubs. . . . **Charles H. Deming** was with us for our first two years. In 1925 he joined the staff of the National Shawmut Bank in Boston and eventually became trust officer. Last summer he died. —**Henry B. Kane**, Secretary, M.I.T., Room 1-272, Cambridge, Mass. 02139.

'25

Dave Goldman's formal announcement of the 40th Reunion reached you several weeks ago. It is hoped your reply has been sent back by this time. If not, won't you get it in the mail today? The announcement has been in the mail only two weeks as this goes to the Review editor on November 13; and to date we have an indication from 32 classmates that they plan to be present, most of them with their wives; another 25 are not certain, as yet. We will be getting into your hands shortly a complete listing of those who are planning to come so that if your name is not on the list, I am sure you will get it there very soon, for the opportunity to meet with so many of your classmates after these many years is one that you should not pass up. . . . It was my privilege a few weeks ago to

give a conducted tour of M.I.T. to a dozen members of our Class. The group included the following: **Victor Allen**, **Myron Doucette**, **Dow Drukker**, **George Elkins**, **David Goldman**, **Frederick Greer**, **James Howard**, **Edwin Kussmaul**, **Stanley Lane**, **Avery Stanton** and **Samuel Spiker**. . . . It was more than pleasing to learn of some of the more recent activities of **Myron Doucette**. During the past years, he has been quietly going ahead and obtaining a master's degree in business administration and a Ph.D. and, in addition, has a position as assistant to the president at the State University of New York at Stony Brook, Long Island. He moved into this field following his retirement from the Scovill Manufacturing Company and seems to be getting a great deal of enjoyment out of this assignment.

Two of our classmates, **Harold Bishko** and **Fred Cunningham**, have sons in M.I.T.'s freshman class of 1968. . . . A note from M.I.T.'s Registry of Guests indicates that **Ben Oxnard** represented the Institute at the Inauguration of John T. Fey as the 14th president of the University of Wyoming on December 12, 1964. . . . It has recently been announced by the President of the New England Gas and Electric Association in Cambridge that **Ello Richardson** who had been scheduled to retire last September is continuing with the association as vice-president and consultant until March of 1965. . . . A news item in the Milwaukee Sentinel announced that **Gus Hall**, retired works manager of the Nordberg Manufacturing Company, has been elected president of the M.I.T. Club of Milwaukee. This particular club draws upon some 250 resident alumni in the Milwaukee area. . . . A most interesting letter has come from Mrs. **Lynwood A. Tripp** who was recently invited by the Society of Women Engineers, New York Chapter, to attend the First International Conference of Women Engineers and Scientists as the delegate from New Jersey. Every state in the Union plus 34 different nations were represented at this conference, and on the first day, which was "Women Engineers Day at the World's Fair," there was a parade of states and a roll call of nations. Since Uganda had no women engineers or scientists to send, a lone man was there on that occasion to represent that country. This group was given the special privilege of visiting the many interesting exhibits at the World's Fair without having to stand in line. The further activities at this conference are being quoted as reported to me by Mrs. Tripp, perhaps remembered by many of you as **Mary Watson** when we were students at the Institute. . . . "The second day we went to one of the IBM Research Centers at Yorktown, N.Y. We toured the place and were entertained for lunch. We then went to the first Atomic Energy Plant for domestic use at Indian Point, N.Y. It is operated by the Consolidated Edison of New York and furnishes most of the electricity for New York City. That night we had a wonderful reception and dinner at Patricia Murphy's in Yonkers, N.Y. The third day was the formal opening of the First International Conference of Wom-

en Engineers and Scientists, also the 14th Annual Convention of the Society of Women Engineers. It was held at the United Engineering Center in New York City. The keynote address was given by Dr. Lillian Gilbreth. That evening there was a reception, courtesy of Engineers Joint Council and its member bodies (such as American Association of Chemical Engineers, etc.). A movie was shown of the launching of Tiros, the first weather satellite, relay communications satellite, and lunar and Venus probes. The fourth day was a session on 'Industrial and Social Needs.' After lunch, 'Needs of the World's Standard of Living.' At six, we left by bus for the West 42nd Street Pier where we boarded a boat for a sunset tour around Manhattan with supper aboard.

"The fifth day brought reports on the current status of engineers and scientists. Then a tour of the United Nations followed by a reception, courtesy of the Union Carbide Corporation at 270 Park Avenue, New York City. On the sixth day there was a symposium on developing engineering and scientific talent. At 7:30 P.M. the Annual Society of Women Engineers Banquet was held at the Belmont Plaza Hotel. On the seventh day, there was a brunch at the Belmont Plaza Hotel, then a meeting of the Society of Women Engineers and a preview of the convention of 1965 to be held in Chicago." . . . It is with sorrow that I report the passing of another classmate, **Joseph Cashman** died in Norwood, Mass., on July 3, 1964. —**F. L. Foster**, Secretary, Room 5-105, M.I.T., Cambridge, Mass.

'26

We are again writing Class News from our tiny guest house in Pigeon Cove, and it appears that this will be '26 home base for some time to come. We have sold our house where we have written the notes for the past 15 years to a Harvard professor. Don't become alarmed, we are not deserting Pigeon Cove. We have land adjacent on which we plan to build a new '26 headquarters. Meanwhile this tiny guest house has the same distracting view and we see no reason for discontinuity. As I write this my head turns away from my block of paper to see a lobster boat coming out of the harbor—no great event but it is relaxing to watch. To get back to class notes, let's hear from **Don Cunningham**, our 40th Reunion Chairman. He wrote to the Reunion Committee recently and his letter will tell you of the groundwork. "Members of the Committee for the 40th Reunion; **Robert Dawes**—Transportation; **Jack Larkin**—Publicity; **Joseph Levis**—Sports Activities; **Chenery Salmon**—Treasurer; **George Smith**—Secretary. As you can see from the above list we have classmates with experience on previous reunions serving on our committee for the 40th Reunion in 1966. We have received confirmation from the Belmont in West Harwich that they will take care of us for our reunion. This will cover the period from Friday, June 10, to Sunday, June 12. This is the hotel that took care of us so

very well on our 35th Reunion. As far as the reunion is concerned, it appears that we have plenty of time before starting to make definite plans and, as mentioned, we have the hotel reservation. There is, however, considerable work to be done in planning for our reunion gift. Any time that **Austin Kelly** plans to be in Boston would be an excellent time for our first meeting, at which we can discuss with him ideas he might have regarding the most effective way of carrying on this drive. In the meantime we should all do the best we can, individually to aid in this fund drive. I will be very pleased to hear about ideas that any of you might have which you believe would be helpful in our total effort. Don."

It sounds as though things are off to a good start. Even though the reunion is a year and-a-half away, I have started checking over the color slides taken at our reunions and found that I have them back to our 15th. Consequently I have considerable sorting and organizing of these slides and rather than wait until the night before, I have already started by purchasing a new projector that has rotary trays that hold 100 slides. If any of you have reunion slides that you care to part with on a loan or gift to the class basis, please send them along and I will incorporate them in our '26 show. Here's a needle for all of you classmates who keep telling me that you are going to send along something for the notes. The needle consists of quoting a longhand letter from our busy Class President in London (the inference—if he can find time. . . .) Here's **Dave Shepard's** recent letter: "Dear G.W., Did you know that **Biff Symonds**, having retired from Esso about four years ago, has now been appointed a full professor of econometrics at Case? He returned there this fall after a sabbatical year in which he has been going around the world. He just telephoned me here, which is how I know about it. He has on this trip given lectures in Tokyo, Calcutta, Cairo and other places and will lecture this afternoon at the London School of Economics. I didn't get a chance to see him, but he certainly sounded fine in our telephone conversation. Sincerely, Dave."

Even though I am always pleading for class notes the file usually contains one or two longer items that I save for a busy day. Here is one I have been saving but I find it interesting because it gives a rather complete history of one of our successful classmates. "**Clarence J. LeBel** received his B.S. from M.I.T. in 1926 and his master's the following year. He began his career in 1927 as a research physicist for Raytheon, Inc. His first patent application has since become one of the much litigated fundamental patents on the fluorescent lamp—the so-called LeBel patent. In 1929 he became associated with Sylvania as a research engineer and there he invented the first animated neon lamp with inherent animating system. In 1937 he became chief engineer at Audio Devices, Inc., and in 1940 vice-president, a position he still holds. For Audio Devices he did engineering work on the first automatic machine lacquer recording disc plant in the United States and supervised development of their first magnetic re-

cording tape. Audio Devices, Inc. is the largest maker of lacquer recording disc blanks and the second largest maker of magnetic recording tape. In 1947 Mr. LeBel founded the Audio Instrument Company in New York City of which he is president and chief engineer. From 1947 to the present he has been principally engaged in the development of logarithmic amplifiers, intermodulation meters, reverberation generators and tape time delay units. Most high quality audio equipment today is developed using intermodulation units produced by Audio Instrument." . . . I have to admit that at this point in the writing the carpenter arrived and before he left the architect, with the net result that from 10 A.M. until we left Pigeon Cove there wasn't a moment to write any more. I can't seem to get in the mood elsewhere to write class notes so for this January issue I am adding my cheerio just before leaving the office. See you in February.—**George W. Smith**, Secretary, E. I. duPont de Nemours, 140 Federal Street, Boston.

'27

Henry Donaldson Johnston, President of the Strathmore Paper Company of West Springfield, died suddenly in his home at 171 Falmouth Road, West Springfield, on September 10. Henry was a native of Millers Falls, Mass., attended high school in West Springfield, and entered M.I.T. freshman year. At Tech, he was active in the Musical Clubs and in the Athletic Association. After graduating in Course XV he joined the Strathmore Company, and since then his career has been closely followed in this column. His appointments included: assistant to vice-president of production, 1929; industrial relations manager, 1945; assistant to president, 1948; director, 1951; vice-president and assistant to the president, 1958; president, 1960. Through the years, Henry was prominent in paper industry affairs. At the time of his death, he was a member of the executive committee of the Cotton Fiber Group of the Writing Paper Manufacturers Association. He is survived by his wife and a son, Lynnwood, to whom we extend the sympathy of the class.

Lenvik Ylvisaker, who has been Continental Can Company's vice-president in charge of research and engineering since 1961, has been appointed to the newly-created post of vice-president of manufacturing. Lenvik's new job will embrace a wide area of responsibilities. He will supervise the operations engineering, equipment manufacturing, and construction engineering in 163 plants, as well as an expanded program of manufacturing innovation, which will complement Continental's research and development in package design and construction. . . . Life magazine of September 18, under "Editor's Note," featured **Gjon Milli**. His article about Bertolt Brecht, the playwright, appears in the same issue. "John" came to Tech from Romania, graduated in Course VI, and went to work for Westinghouse in stroboscope develop-

ment. In 1939 he went to work for Life and made a name for himself with pictures of dancers and athletes at the apex of a leap or with multiple exposures. He made much use of equipment developed by Dr. Harold Edgerton. The editor describes his current article as "not with strobes, but with situations, people and ideas, trying to distill in his mind and cameras the subtle essence of this complicated playwright". . . . Word of **Jim Lyles** is good. With the old Lyles determination, he is getting his muscular coordination back in good shape. . . . Professor **Henry G. Houghton**, head of the Department of Meteorology at M.I.T., has been elected president of the Section of Meteorology of the American Geophysical Union, for a three year term. Throughout the years, Professor Houghton has been most active and prominent in the affairs of this organization. Most recently, he completed a three-year term as vice-president. . . . Just as these notes have been completed for mailing, we have received word of the death of Professor **Frank E. La Cauza** of the United States Naval Postgraduate School, Monterey, Calif. We have no date or details but hopefully will have them next month.—**Joseph S. Harris**, Secretary, Masons Island, Mystic, Conn.

'28

Let's face it. We have reached a point in life where your secretary receives notices of retirement and notices of death in about equal proportions, which reminds us that we recently received a communication from **Harold Bugbee**, Secretary of the Class of '20. After explaining a news release about **Bud Gray**, which he had received in error, he said: "Wait until you get to your 45th and all you will be doing is writing death notices. Can't be helped!" It's good to be young and vigorous with our 45th far in the distance. . . . Incidentally, the news clip simply stated that Bud was addressing the public school teachers in St. Joseph, Mich., at an annual seminar. The clip is from the Benton Harbor News and to quote: "Gray from time to time has spoken out in times of crisis in the twin cities. He issued a resounding 'call for action' in a speech last spring to businessmen and government officials. Following his graduation from M.I.T., Gray began his career with Sears, Roebuck and Company. Prior to joining Whirlpool, he was vice-president and general operating manager of Cutler Shoe Company, Chicago. Gray is a member of the governing board at M.I.T., a director of General Foods Corporation, a director of Sears Bank and Trust Company, Chicago, and a member of the Business Council. He is a member of the board of governors of the American Red Cross and was formerly chairman and is now a member of the board of trustees of Mercy Hospital, Benton Harbor. He is a member of the Chicago and University clubs of Chicago. Gray joined Whirlpool in 1938. In 1940 he was elected vice-president, in 1943 a director, in 1947 executive vice-president and in 1949

president. On May 12, 1958, he became chairman of the board of directors of Whirlpool."

A long and pleasant letter from **Pete Potter**, 1346 Midland Avenue, Bronxville, N.Y., said: "I'm afraid I don't generate much news for your '28 class notes—never get caught and jailed, no children to speak of, and few job changes. But I do find the fact of my retirement (from Bell Telephone Laboratories) of great interest to me (more sleep and less income). When I retired from the labs **Cole A. Armstrong**, also '28, was my bosses' bosses' boss." . . . An enclosed news clip from Bell Lab News says: "**Everett A. Potter**, a supervisor of the transmission components group at West Street's Quality Assurance Center, retired September 1 after 37 years of Bell System service. Mr. Potter began his Bell System career with the A T & T Company in 1927. At A T & T, Mr. Potter worked on problems resulting from interactions between a-c electrified railroads and the telephone plant. He continued this work after coming to Bell Labs in 1934. Subsequently, he was concerned with the protection of plant and personnel against electrical hazards, with emphasis on the effects of lightning. Later he designed power transformers and inductors. For the past 17 years he has engaged primarily in quality assurance work with transmission components."

"He received his B.S. degree from Dartmouth in 1926 and also studied at M.I.T. Mr. Potter is a life member of the American Association for the Advancement of Science. He is also a member of the Telephone Pioneers. He and his wife, Gertrude, plan to travel in the United States and Europe." . . . Another news clip from the Salem, Mass., News shows a picture of **Mieth Maeser** flanked by the president of the American Leather Chemists' Association and the director of research of United Shoe Machinery. After a few introductory paragraphs, which told about the 140 guests who attended the dinner at the Hotel Hawthorne, Salem, honoring Mieth, the News said: "Maeser, who is an ardent golfer, was presented a golf cart and woods as a gift from his friends and fellow workers, with Vincent Terry making the presentation. . . . A native of Utah, Maeser holds an A.B. in mathematics and a master's degree in biology from Brigham Young University. In addition, he has a B.S. in architecture and M.S. in architectural engineering from M.I.T. Maeser joined the United Shoe Machinery experimental department in Beverly in 1934 as an engineer. Over the years he has served as section head, inventor, executive and, since 1958, as senior staff engineer in the engineering department. He is also a member of U.S.M.'s Quarter Century Club. . . . Author of many articles on leather research, Maeser is a life member and past president of the American Leather Chemists' Association. He has received many commendations for his contributions to leather research, and has traveled to Europe as the representative of the ALCA. The Maesers have made their home in Beverly since he joined U.S.M. Active in civic affairs, Maeser is

a trustee of the Beverly Public Library. The Maesers have one daughter, who teaches school in New Jersey."

After returning from a delightful trip through Florida early in November, our roving reporter **Jim Donovan** reported the following: "This last week during a trip to Florida my hostess drove me around Sarasota and I saw the name of **George Bernat** on a mail box, so I asked her to stop, and we called on Ruth and George. They were just back from a summer vacation, during which they cruised the South Seas as far as New Zealand. You may remember that they had two sons who came to the reunion. One is now working for General Electric and the other is in law school. . . . I recently had a very nice letter from **Bob Murphy**, telling about his completing a large consulting job for Clark Gum. . . . The other night I attended a dinner connected with the Underwood Prescott Award and spoke with Ella and **Bill Gorfinkle**. Ella is very attractive, appearing to 'youthen' with age, while Bill stands square and erect with rather graying hair." . . . News from the Textile Bulletin of Charlotte, N.C., tells us that **Elliot B. Grover**, head of the Department of Textile Technology in the North Carolina State School of Textiles, has been named "1964 Man of the Year" by the Phi Psi textile fraternity. The award is made annually for outstanding service to the textile industry or to the cause of textile education. Grover also holds appointment as Abel C. Lineberger Professor of Yarn Manufacturing. He joined the faculty at North Carolina State as a department head in 1944 after 16 years in industry. . . . It is our sad duty to report the death of **Louis J. O'Malley** last August in Cohasset, Mass. After graduating in 1928, Louis was graduated from the Boston College law school in 1936. For many years he practiced law in Boston, and at the time of his death was a member of the Northeastern Law School faculty. He left a wife, Cornelia, and five sons. Most of us remember Louis as having been heavyweight intercollegiate boxing champ while at Tech. . . . We also regret to report the death of another classmate, **Colonel Sargent P. Huff** in Chevy Chase, Md., last January 10.—**Hermon S. Swartz**, Secretary, Construction Publishing Company, Inc., P. O. Box 255, Lexington, Mass. 02173.

'29

As we from New England and other northern regions start to think about migrating to the sunny south for a brief respite from the rigors of winter, we thought you might like to hear particularly about some of our peers who live in the temperate zones of our country. . . . We learn that both **David Peene** and **Alexis Kononoff** live in Coral Gables, Fla. David reports that he is retired, but he certainly must keep busy and maintain an active interest in architecture through his memberships in the Royal Architectural Institute of Canada, the

Ontario Association of Architects and American Institute of Architects. As president of Kononoff and Smith, Inc., architects-engineers, Alexis travels approximately 100,000 miles a year, specializing in military defense work for D.O.D. and industrial projects in South America. . . . **John Davis Newman, Jr.**, of Ridge Manor, Fla., reports that he is retired from the New York Telephone Company where he was sales manager; but we note with interest that he is now in office as the justice of the peace, first Justice District Hernando City—the only Republican ever elected to public office in Hernando City! . . . **Herbert Alley** writes that he is semi-retired and owns the Key Haven Motel in Tavernier. He is very active in conservation and just received notice of an award as the conservationist of the year for Florida. After visiting M.I.T. in 1962, Herbert was amazed that he couldn't find the "hollow room under the dome?"

Having worked 17 years with North American Rayon Corporation and eight years at Tee Pak, **Clifton Smith** has been retired since 1954, dividing his time between the mountains of East Tennessee and Sebring, Fla., where he enjoys fishing, hunting and gardening and is the commissioner of Sebring public utilities. . . . In Boca Raton, **Kenneth Garside** is a teacher at the St. Andrews Episcopal School for Boys and is a member of various educational associations. Extensive travel has brought Kenneth to the conclusion that "people are the most important thing in this world," and he says that "teaching is a means of communicating and fostering this conviction." . . . In thumbing through the various responses we have received from classmates living in Florida, we find they are quite an active group of people, interested in many various civic affairs and enjoying the pleasures of sailing, fishing, gardening and the outdoors that the sunny South offers. . . . Moving up along the southern coastline we find that **Frederick Webster** lives in Bossier City, La. He is office manager and resident engineer for Hartford Accident and Indemnity Company and has worked for Hartford for the past 35 years in 11 different offices. . . . **Lewis Hess** is a resident of Baton Rouge, La., where he is superintendent of patent information for Ethyl Corporation. . . . **Amasa Smith** makes his home in Birmingham, Ala., where he is the division manager (Southeast) for Chicago Bridge and Iron Company, plus being engaged in many civic activities such as Boy Scouts, YMCA, Red Cross, Community Chest, and so on. If you see Mace, ask him to explain about his barefoot wife at the reunion at Wianno! . . . Another resident of Birmingham is **Kenneth Grimley** who is the executive secretary of the Alabama Tuberculosis Association and is an assistant professor in the Department of Preventive Medicine, Medical College of Alabama, University of Alabama. . . . **George H. Schumacher** from Wilson, N.C., writes that he is a retired colonel of the Regular Army with 42 years of military service. . . . **W. B. Sellars**, Vice-president of Burlington Industries, replied from Greensboro, N.C.

Heard from were several classmates residing in Virginia. **Macon Fry** of Alexandria reports he is a consultant in weapons analysis and operations research. . . . From Arlington, **James E. Howarth**, writes he is a project officer, R&D Flight Standards Service, for the Federal Aviation Agency. . . . **Edwin Osborne** of Springfield reports that he is now retired and he and his wife have spent many enjoyable months in out-of-the-way places in Mexico, Europe, Africa and the United States and are planning to go to the Far East. . . . From McLean, **Sydney Hardwick** writes that he is presently a U. S. Army program manager and staff officer in the missile field. We also learned from Sydney that his daughter, Mildred, is a technical illustrator doing freelance work in the Boston area. "Anybody for brochures, artist concepts, and so on?" . . . **Ray Durrett** of Charleston, W.Va., has worked 35 years with the Bell System service and is plant extensions engineer for the Chesapeake and **Art Marlow** last in Pakistan . . . From Silver Spring, Md., **Murry Brimberg**, President of Brimberg Associates, Washington, D.C., writes that after a 15-year stretch in government service with the Federal Aviation Agency, he and his wife started their own firm 10 years ago, representing electronic manufacturers in the mid-Atlantic states. They have just returned from a month's trip to Europe. I believe Murry voices the feeling of most of us when he writes: "I believe very strongly in the best possible educational system to help promote understanding, continual expansion of horizons and good human relationships. With the world growing smaller, peace and progress are vital for all peoples. In our small way, each individual can contribute toward this goal." . . . In a lighter vein, **Harold L. Halpert**, also from Silver Spring, who is a self-employed patent agent, sums up the three stages of a man's life as "hatched, matched, and snatched," which is a concise way of putting it! . . . **Ed Powley** of Baltimore is division manager of Cities Service Oil Company, having started his career pumping gasoline for Socony when **Eric Bianchi** was a good customer. He reports having heard from **Art Marlow** last in Pakistan. . . . From Annapolis, **Hansen Ball** writes that he is a professor of mathematics at the U.S. Naval Academy, having been there since 1936, with the exception of four years' active duty in World War II.

Richard Roberts is in Wilmington, Del., where he is design project manager, engineering department of E. I. du Pont de Nemours Company. With his family he has enjoyed extensive travel and they speak from one to three foreign languages to some extent. He writes that his children have lived with families in many European countries and through them "Dorothy and I have had much vicarious pleasure." Richard also adds news of **Ray DeLano** whom he sees daily in the course of his work where Ray is senior mechanical engineer in the design division. . . . We heard from three of our class members living in Washington, D.C. **Wingate Reed** is a retired army officer and is also a freelance writer and

author of numerous articles. He says, "Thanks to my Uncle Sam, have had a very full, interesting and enjoyable life. Wish I could do it all over again." . . . **Butler King Couper** is an oceanographer with the Navy Department, Bureau of Ships, and reports on a meeting with **Gordon Rogers** last January. King says that Gordon is living in Berkeley, Calif., where he is one of six top men in the U.S. in the field of engineering appraisal and evaluation business in insurance cases. . . . **Nick Stathis** also writes from the capital where he is general supervisory engineer, Research and Development Directorate, Army Materiel Command. Nick is active in affairs of the American Society of Civil Engineers, National Society of Professional Engineers, and the M.I.T. Club of Washington, of which he is a past president and currently a member of the board of directors. . . . More later, but I want to report responses to the questionnaires have now come to a standstill, so please send yours in if you have not done so. . . . In the listing of class officers in the November issue, we overlooked mentioning **Bill Baumrucker** who is our class treasurer; and as "Mr. Moneybags" he reports a balance of "34¢ or maybe \$1.34." However, I am sure he has more challenging interests as a member of the advisory board of Tech Engineering News and chairman of the Theta Chi Trust. . . . **Francis Mead** represented the Class of 1929 at the Fifth M.I.T. Alumni Officers' Conference in September, during which he actively participated in introducing lecturers in the Green Building. He is a member of the Association's Executive Committee. Did you see his picture in the November Review? Good work, Frank! . . . I hope you will include posting us news as one of your New Year's resolutions. Happy New Year to you all!—**John P. Rich**, Secretary, 67 Berkeley Street, Nashua, N.H.

'30

During the course of a recent parents' weekend at Lehigh we stopped in to see the **Parker Starratts**, who are now living in Bethlehem. Parker's move to Bethlehem was occasioned by Bethlehem Steel Company's spin-off of its shipbuilding operations in Quincy, Mass., where he had worked for 33 years. His work at the home office involves cost analysis problems similar to those with which he dealt at the shipbuilding company. The Starratts' new address is Box 182, Bierys Bridge Road, R.D. 2, Bethlehem, Pa., where they live in a sylvan setting with a creek, having one of those unpronounceable and unspellable Indian names, meandering past the rear of their house. Their son Robert is a senior at Colgate and daughter Priscilla is a junior at Moravian Seminary. Parker played a short selection on his Hammond organ for us, showed us a bookcase he is building and his amateur radio equipment (call letters WA3 BQX) and allowed us to swing his new putter, thereby bringing us up to date on four of his current hobbies. . . . At the October 22 meeting at the New

York Alumni Center I had a pleasant chat with **Chick Dolben**, who is having a lot of fun running a group of three small companies entitled Aquadyne Corporation, Motomco and N. J. Meter Company. His companies make such diverse products as aerosol ingredients, dust control agents, room deodorants, compressed air meters and moisture meters for grain. The Dolbens live in Summit, N. J., and have a son Bill who is a senior at Lehigh. . . . **Helen Lustig Thornton** is teaching mathematics at Brewster High School in Brewster, N.Y. Her daughter Lou Ellen attends Dutchess Community College. . . . **Clyde Tirrell** is at the U.S.N. Electronics Laboratory in San Diego, Calif., doing R & D work on Navy communication antennas and related equipment. . . . **Ed Nolan** has moved up from manager of the Merck & Company Rahway plant to director of chemical control for all of the Merck plants. Ed is active in community affairs as president of the Union County Safety Council, chairman of the Union County Citizens Budget Committee, a director of the Eastern Union County Chamber of Commerce and president of the Mountainside, N.J., Board of Education. . . . **Godfrey Thomson** is a plant engineering draftsman with Colorado Fuel and Iron Corporation in Pueblo, Colo. . . . **Phil Holt** was recently appointed research management director of Esso Research and Engineering Company in charge of co-ordinating the research operations of the different divisions of the company.

Jarvis Wilson has been elected operations vice-president of the Rochester Telephone Company. . . . We have notices at hand concerning the deaths of two more of our classmates, **John Kenyon** last August 6 and **Walter Greymont** on October 20. John lived in Fort Worth, Texas, where he was manager of sales-production equipment for Mid-Continent Supply Company. No details are available on Walt. . . . Changes of address: **Robert Asbury**, 5823 South Pollard Parkway, Baton Rouge, La.; **John Byrne**, 29 Cameo Place, Levittown, Pa.; **William Griffith, Jr.**, 3342 East 5th Street, Tucson, Ariz.; **James Merrill**, 1729 Fox Avenue, SE, Paris, Ohio; **Dr. Ferdinand Rousseve**, 135 Waban Hill Road North, Chestnut Hill, Mass. 02167; **Parker Starratt**, Box 182, Bierys Bridge Road, R.D. 2, Bethlehem, Pa. 18017; **Charles Twelves, Jr.**, Room 1805, 821 Second Avenue, Seattle 42, Wash.; **Daniel Walker**, 2 South Edison Street, Arlington, Va. 22204; **Herbert Wampner**, 5 Keating Place, Hartsdale, New York 10530.—**Gordon K. Lister**, Secretary, 530 Fifth Avenue, New York, N.Y. 10036; Assistant Secretaries: **Charles T. Abbott**, 26 Richard Road, Lexington 73, Mass.; **Louise Hall**, Box 6636, College Station, Durham, N.C.; **Ralph W. Peters**, 16 Whitestone Lane, Rochester 18, N.Y.

'32

Dr. John A. Fellows, VIII, has been elected president of the American Society for Metals. He is assistant technical director, R and D, Uranium Division,

Mallinckrodt Chemical Works, St. Charles, Mo. Since 1953 he has been in charge of development work in uranium metal and he served with the Manhattan Project during the war. . . . **H. Archer Clark, Jr., XV**, has been advanced to vice-president of mortgage loans at the Phoenix Mutual Insurance Company, Hartford, Conn. . . . **Dirwood M. Danforth, II**, has been appointed assistant director of programing in the R and D Division of the Singer Company at the company's New York headquarters. After discharge from the Army in 1946 with rank of lieutenant colonel, he joined the Diehl Division where he has held technical and administrative positions. . . . **Steven A. Coons**, who is now an associate professor in the mechanical engineering department at M.I.T., co-authored a paper in I.E.E.E. dealing with visual display of a flight path or road, generated artificially by electronic means. . . . Our M.I.T. Tech Engineering News, has appointed Professor **Albert Dietz** to its advisory board. He has also been appointed chairman of the editorial board of consultants of Architectural Plastics International and is also a member of the technical advisory board of Architectural and Engineering News. . . . The column has drawn some response. A letter from **John Yeager**, mentioned here in connection with the Fair and Yeager Insurance business in Natick, Mass., adds that he has two daughters, 18 and 22, and is still interested in hobbies of boating, photography and amateur radio.

The report recently on **Kurt J. Heinicke's** activity in ultrasonic decontamination equipment brings a letter from him describing a new application to car washing. His company in Hollywood, Fla., is offering a packaged "Heinicke Heicarmat" which puts you in the car washing business with automatic 88-second equipment. . . . While writing this copy early in November we were saddened by the news of the deaths of first lieutenant Douglas H. Brookfield, 24, and first lieutenant Guy Vassalotti, 27, in the crash of a C-133 Cargomaster after takeoff from Goose Bay Air Force Base, Labrador. The loss of a son to both Mr. and Mrs. **Donald W. Brookfield**, 168 Massapoag Avenue, Sharon, Mass., and Mr. and Mrs. **Louis J. Vassalotti**, 127 Kenilworth Drive, Akron, Ohio, in the same accident is sad news to report to their friends and classmates.—**Elwood W. Schafer**, Secretary, Room 10-318, M.I.T., Cambridge.

'33

Well, Gentlemen, this is the first set of notes written up by the Scribe in which there is not one written personal note from any of the 600 odd characters eligible to send information. You do not have to tell us what you were caught at; just tell us "Who, what, where, when and why." . . . The press is always good for a few items of general interest. At a panel discussion last June at M.I.T., **Bob Winters** held forth at length on the opportunities for engineering and scientific graduates in civil service. Bob said, in

part, "wonderful opportunities exist today for engineering graduates in civil administration, as they are trained to solve problems, and heaven knows that government can make use of just such talents." There is much more, and most of it would hold in any democracy, provided we have a democracy, a point which is open to some question. I beg to add one further thought: why not try to replace large numbers of our present Civil Service Corps with some who can think straight, whether they are engineers or not. Bob is better acquainted with Canadian Civil Service, and has probably never seen the invisible "Slow Men Working" signs in Washington.

While speaking of Canada, I recalled the classmate who lived way 'nawth' in New England, in Maine, almost on the New Hampshire boundary line. The "Engineers", as Ray Douglass used to call them, ran a survey all around him, and then told him that the boundary had been relocated, and that henceforth, he would be a resident of the Sovereign State of New Hampshire. Our pal was not disturbed, and said, "That is alright with me. I never could stand them state of Maine winters." Name furnished to anyone who writes in for it, with attached personals, and thank you in advance. . . . Incidentally, it is ironic that one of our more eminent classmates, **Neil Hopkins**, came from Maine, and after taking a master's degree went to work for York Ice. He could have stayed right in Maine, and there would have been little need for machinery for making ice. It grows naturally in his home country. How about it? . . . I have before me, a picture of **Morris Cohen**, holding forth on the platform of some metals meeting or other, answering a question. This is the first time that I have had a picture of a classmate, with no story on it. Morris, I can give you several lines next issue if you let me in on your activities. . . . I have an unsigned note, probably from the Alumni Office, telling me that **Kenneth P. Morse**, '68, is the son of our own **Dick Morse**. As the Deutscher might put it, "it wonders me how long I would have to wait before Dick got around to mentioning this item." Did you fellows know that it is great to believe in yourselves, but, don't be too easily convinced? . . . **Lynn Williams** made local news in Roselle, Ill., speaking at a meeting of Democratic Party leaders in that neighborhood. Lynn, it seems, was trying to take a Congressional job away from some Republican. Although I cannot altogether approve of this effort, it is an encouraging sign to find a man of Lynn's capabilities getting into politics, no matter what party he works with. Lynn has been vice-president of both the University of Chicago, and Stewart Warner Corporation and is a patent attorney. He was graduated from Yale and has a law degree from Harvard. . . . I will watch the papers, Tuesday next, to see how Lynn makes out.

Stew Hungerford appeared again in the news. As earlier reported Stew was made the Western Canada Manager for DuPont of Canada, with his headquarters in Vancouver. Stew, again our con-

gratulations, and let us have your new address in the return mail. We do not like corporate addresses. . . . At the bottom of the press clipping pile is a two-page article described most easily by a quotation, as follows; "meeting in Virginia, and a large one, to discuss the impact of technological advances in computers, communications, printing, and graphic storage on libraries." (Let me add, particularly on the Library of Congress.) We have the article because our classmate, **Gilbert W. King** of Ittek Corporation presented a paper entitled, "Automated Library System." When you get through with the job you are doing, please come to Exeter, N.H. to sell the Office of Register of Deeds a system. Gil seems to be in a very interesting business. Why don't you tell me, Gil? I can use most anything. . . . I do have one personal. I have not heard from one grandmother yet, so no flowers. . . . Two or three weeks ago, **Lou Flanders** telephoned me and made a tentative date to visit me at the farm with **Jim Turner** in tow. October 24, Lou and Jim, with their lovely wives arrived about 4:00 P.M. I bundled them all into my Volkswagen microbus, and took them across the tracks (we live on both sides of the tracks), and showed them the biggest little Angus herd in all the East. All the guests admitted that they knew nothing whatever about beef animals, and still don't know why we are not raising meat, only breeding animals. I tried to refer them to Professor Millard's course in biological reproduction for mechanical engineers, but they didn't know anything about that either. So, to whom it may concern, allow me to hold forth, briefly. Yes, all these beef animals are edible, but were we to eat them all, there would be no more beef, and we do not wish that to happen. Anyone who desires a short discussion on reproduction may write the Secretary of the Class of '33, and he will find himself right in over his head, in most cases, even if we have to dive into genetics. Anyway, the reason for Lou and Jim's visit will be already apparent by the time you read this set of notes, as we discussed the Kimball Scholarship Fund, a letter to the class sent out in November, and a possible future letter, which you may have by this time. This took an hour, after which we slaked our collective thirst a bit, and went to the Exeter Inn, (Phillips Exeter Academy), for the Friday night buffet. All six of us enjoyed it. The only fish not from New England waters were the fried shrimp. The real reason for my telling you folks about this is so that you all will come to see us, as Lou and Jim did, and this is an invitation starting May 20, 1965. Another item, and important, if we ever need a replacement, and I hope we never do, Jim Turner is **Ed Goodridge's** own choice, as Ed not only picked the job executive vice-president but also picked the man. He made no mistake, as I have just had my first chance to find out, Jim is one of the most capable, loyal, quiet, and hard working classmates we have, a nice fellow to boot. You will be hearing more of and from him as time goes on.

Please do not forget the Kimball Scholarship Fund. I will tell you again something that you have heard before, and will keep on telling you: you got a satisfactory education at the Institute at less than half cost—a bargain. You owed the school about \$700 in June of 1933. Corrected to the values of the present dollar, if you have made no or only token donations, you now owe them about \$3,000. I can let you in on something more; you may not come through as you should, but, you will not be able to forget it, if this typewriter holds up! . . . Happy New Year to you all, and let's have the news.—**Warren J. Henderson**, Secretary, Fort Rock Farm, Exeter, N.H.

'35

Hail to the Class Golf champion for 1964—**Art Marquardt**! **Ham Dow** extended the match to the 17th hole before losing. It was played at the Weston Golf Club, a neutral course, with our secretary acting as scorekeeper and guide. **Sid Grazi** will have passed the President's Cup along to Art by the time you read these notes. . . . **Rufus Applegarth** flew up to the Northeast Electronics and Radio Engineering meeting and telephoned me while he was in town. He also came up for a director's meeting of the student operated, M.I.T.-sponsored, Technology Student Enterprise which has been in operation for 15 months. It gives the student with a unique idea an opportunity to try it out on the marketplace. It is a wonderful means of providing practical knowledge on small business operations and management. For those of you who would like to learn more about this, contact Dean Wadleigh at M.I.T. **Rufus** is, busy expanding his own operations and product lines. His company acquired Airshields, makers of the original baby incubator and E&M Instrument in the medical instrument field. . . . News from here and there: **Elmer Roth** has been elected controller by the directors of Fafnir Bearing Company, Inc. . . . Professor **Prescott Smith** represented M.I.T. at the centennial convocation commemorating the founding of Worcester Polytechnic Institute. . . . Dr. **Clarence Davis** has been promoted to professor of obstetrics and gynecology at the Yale school of medicine. . . . Colonel **Louis W. Pflanz, Jr.**, has been shifted from Albuquerque, and his new address is U. S. Elements, Cento, American Embassy, APO 254, New York, N.Y. **Bud Pflanz**, if you read these notes, how about writing and telling us what you are doing and where. . . . **Robert S. Carr's** new address is Charlestown Road, Hampton, N.J. . . . **Randall Smith** is at 4005 Sandy Creek Drive, Utica, Mich. . . . **Joseph T. Cook** is now in Meridian, Miss., at 4214-33rd Place. . . . **Harry Gallay** has moved to Florida from Delaware. His new address is 1220 Druid Road, Maitland, Fla. . . . **Paul Gilmont** can be reached in care of Vilco Company, 4425 Bandini Boulevard, Los Angeles, Calif. . . . **Pete Grant's** home address is Little Hill, R.D. 1, Warner, N.H. . . . **Robert**

D. Scott, Jr. has been named executive vice-president of B. F. Goodrich Chemical Company. Bob received his master's degree with us and has been with the company since 1935. . . . **Jack Colby** has moved from Wisconsin to R.D. 1, P.O. Box 108, Islamorada, Fla. Jack, this deserves a letter of explanation, and we shall look forward to hearing from you.

We have quite a contingent of sons and nephews of our classmates entering M.I.T. this year: **Richard Quincy Fox**, '68, of Bethlehem, Pa., a member of the freshman class, is the son of your classmate **Sidney V. Fox**. The boy's uncle is **William J. Fox**, '41. **Daniel C. Nichols**, '68, of Oreland, Pa., is the son of **Clark Nichols**, grandson of **Robert P. Nichols**, '05, and nephew of **Jackson R. Nichols**, '40. **Jefferson M. Reece**, '68, of Chestnut Hill, Mass., is the son of **George M. Reece**. **David T. Terwilliger**, '68, is the son of **David D. Terwilliger** and the grandson of **David M. Terwilliger**, '14. . . . Don't forget the 30th Reunion coming in six months. Send in your registration early. We want to see You there. It's at the same spot as our 20th, the Chatham Bars Inn on the Cape.—**Allan Q. Mowatt**, Secretary, 61 Beaumont Avenue, Newtonville, 60, Mass.; Regional Secretaries: **Edward C. Edgar**, Kerry Lane, Chappaqua, N.Y.; **Hal L. Bemis**, 510 Avonwood Road, Haverford, Pa.; **Edward J. Collins**, 904 Merchandise Mart, Chicago 54, Ill.; **Gerald C. Rich**, 105 Pasatiempo Drive, Santa Cruz, Calif.

'36

Among items of interest this month is the news that **Mike Kuryla** has been appointed a vice-president of Cerro de Pasco Corporation, a subsidiary of the Cerro Corporation in Peru. Mike has been manager of the company's Lima Division since 1961 and has been in Lima since 1955. . . . **Karl Gelpke** has been named technical director of the Kendall Company's Fiber Products Division in Walpole, Mass. . . . And Vice-president **Hans Lang** has been appointed the general manager of operations for the Lummus Company. He graduated from Stevens before earning a master's degree with our class. . . . **Paul Robbins**, Executive Director of the National Society of Professional Engineers, addressed the graduating class and received an honorary doctor of engineering from Rose Polytechnic Institute. . . . **De Laval Turbine, Inc.** has announced that **William I. H. Budd** has joined the firm as a marine engineer. Bill was with Bethlehem from 1936 until recently. . . . **Bob Woodward** is a member of the International Committee for the Weizmann Institute of Science 20th anniversary celebration. . . . Lieutenant General **Marshall S. Carter** is with the C.I.A. in Washington. . . . **Harry Hazelton's** new address is 37 Valley Road in Plandome, Long Island, and **Frank Lessard** has moved from South Easton, Mass., to Allentown, Pa. (2627 Livingston Street). . . . **Robert Watt's** new address in Seattle is 4225 23rd Street, West. 98199.

From your secretary come best wishes for 1965.—**Alice H. Kimball**, Secretary, 20 Everett Avenue, Winchester, Mass.

'37

George R. Weppler is president of Harvey Hubbell, Inc., of Bridgeport, Conn. They are an originator of and a pioneer in many of today's wiring device standards. . . . **Milton Karr** has recently been promoted to director of engineering by the U.S. Steel Corporation, Pittsburgh. . . . **Bob Childs** is vice-president of the Bunker-Ramo Corporation, Stamford, Conn. . . . **Joe Keithley** writes: "I am getting older, working harder, enjoying the worldwide aspects of the electronics business by occasional trips to Europe. Enjoying watching the children growing up." . . . We heard from **Jack Simpson**, who is with the Warner Gear Division, Borg-Warner Corporation, Muncie, Ind. . . . **Walt Wojtczak** is construction manager of Standard Builders, Inc., of Hartford, Conn. . . . and **George Bowditch Hunter, Jr.** is a physician at Rockville Medical Center, Rockville, Md. . . . **James M. Cayford** has a son who is a member of the Class of '68 at M.I.T. . . . **Harold E. Prouty**, has a son, **Harold E. Prouty, Jr.**, who is also a member of '68. . . . **Robert P. Rudy's** son, **Richard P.**, is another member of the Class of '68; his brother, **John P.**, is a member of '67; their cousin **Lewis T. Mann** was graduated from M.I.T. in 1946. . . . Also attending M.I.T. is **Charles B. Thorn**, 3d, of Washington, Ind., the son of **Charles B. Thorn, Jr.**

We heard from **John Fellouris** who hails from that famous city (John's opinion) of New Bedford, Mass. He writes: "The Massachusetts Institute of Technology Alumni Club of New Bedford continues to be fairly active. At our annual dinner meeting last June I was elected president. I continue to be quite busy running my building construction company. This summer I managed to get away for three weeks and visited sunny Greece and its beautiful islands. I came back with a good tan which I quickly lost in our New England weather." . . . **Austin C. Loomis** is with Pratt and Whitney Division of United Aircraft Corporation, East Hartford, Conn. . . . **Ice Berg** writes: "Address changed to 240 Hillside Drive, New Cumberland, Pa. After 27 years of marriage, six kids, and one grandchild, we got time for the honeymoon and spent six weeks in Europe and Scandinavia. Real fun." . . . From **Louis Bloom**: "Going on fifth continuous year with G.E. Atomic Power Engineering Department as a purchasing engineer. Had four months' sickness but am back to work better than ever. Oldest boy graduated from San Jose State and is serving six months in the Coast Guard Reserve before starting his career in advertising." . . . It is with great sadness I report the death of **James Movar Clifford**, on August 27, 1964. Jim will be missed by all of us.—**Robert H. Thorson**, Secretary, 506 Riverside Avenue, Medford, Mass.; **S. Curtis Powell**, Assistant

'38

"The Nature of Man" was the 1964 Alumni Seminar with a strong attraction for the Class of '38. Leading the field with nine bona fide registrants, '38 was the class represented in largest number! The distribution had two-sigma limits at about '55 and '17, and a sharp peak at '38 (with '37 a bad second). Members of the winning team were Mead Bradner, Dempster and Dorann Christenson, Paul and Madelyn Des Jardins, Haskell Gordon, Richard and Virginia Henderson, Fred and Polly Kolb, Harold McGillivray, John J. Phillips, and Bob Robbins. Ex officio was, of course, **Don Severance**, who acted as concierge. The terrific curriculum has been reviewed elsewhere in *The Review*, but the seminar was also a fertile environment for a lot of reminiscing. . . . **Mead Bradner** has succeeded in mastering enough conversational Japanese to be accepted as a friend in pursuing his responsibilities as international engineering co-ordinator for Foxboro. (This comes at his own admission, since I am a poor judge of fluency in Japanese.) "If it meets the prerequisite of industrial process control," he said, "it fits into the Foxboro family of subsidiaries in Canada, Mexico, England, France, and Australia and affiliated companies farther spread." Mead is out of the U.S. about 40 per cent of the time, communicating via a dictation tape recorder for both business and personal experiences. How about engineering conferences in Japanese? "Once the introductions have been made," Mead says, "I am only competent to translate from Japanese-English to American-English!"

"Demp, get up and see if that's a bear under the trailer," was Dorann's request. That is often recalled but was never obeyed, **Dempster Christenson** told us. While camping with his family in Yellowstone in 1959, the "bear" rocking the trailer turned out to be the Hebgen Lake earthquake! First trip that it was, it did not discourage the Christensons from trailer camping every year since, as an ideal vacation for five children and a dad who hates to put up a tent. Last summer the family trip was into Michigan for the Interlaken Music Camp. Turns out, by the way, that Fred Lehmann, '51, had time from his logistic support of the seminar to be revealed as an authority on the Hebgen Lake Earthquake, since he tramped over that area of Yellowstone a few months later. He was anxious to see a new fault in all its majesty. Distribution of school supplies, equipment, audio-visuals, etc. in South Dakota, Iowa, and Nebraska, is the more normal activity for Demp and Dorann, which brings them into the philosophy of education and the search for motivation.

Genetic deficiencies in employees worries **Dick Henderson**; not those predisposing to imbecility, but those that might reduce tolerances to industrial hazards.

Quality control of the individual is the way Dick describes his responsibilities as manager, Environmental Hygiene Services, for Olin Mathieson. Some factors, perhaps similar to the sickling of blood corpuscles discussed during the seminar, may represent important hereditary factors that should be significant in the individual's resistance to certain chemical exposures, and this sort of typing may be as important, Dick feels, as the design of processing plants to avoid exposure, and the monitoring of personnel to record exposure. Dick recently visited us at Eastman, attending a symposium on the newest methods of burn treatment. As a real wolf in sheep's clothing, I might add, since Olin is the manufacturer of a biologically active shampoo ingredient that is a sure cure for dandruff but so photographically active that we have to caution all our employees not to use it! Virginia got tired of being a school nurse several years ago, and set out to take an S.M. in library science: she is now in her second year as librarian in the New Haven Junior High regional system. . . . Donna roared up the coast during the seminar, and threatened a swath of small boats, but fortunately kept well out to sea so that the exodus from the seminar was temporary. Polly's mother had recently moved into Carleton Towers apartments in St. Petersburg, and we wondered how much it might be swaying in those tropical storms. Turns out **Hal McGillivray** built the foundations for Carleton Towers, and tested the structural concrete! The district manager of Pittsburgh Testing Laboratory can be mighty reassuring! . . . After dinner Sunday evening, **J. J. Phillips** treated us to an exhibit of the *Ranger 7* moon pictures. Just appointed to the Lunar Technology Panel in the NASA Office of Advanced Research and Technology (under Professor Bisplinghoff, formerly Course XVI), **J. J.** had been transferred from the Apollo Project. He has been concerned with space power and propulsion, and was the keynote speaker in September at the Liquid Propulsion Symposium. It is the assignment of the Lunar Technology Panel to integrate requirements for future lunar missions, determining what are the critical elements of technology to be mastered in order to permit people on the moon to carry out their assigned projects. One of the significant pieces of background data will be filled in by Early Lunar Flare, a bomb to vaporize some material on the surface for examination by terrestrial spectrographs and therefore yield information on surface density and composition.

Bob Robbins, as B52 program manager, is involved in the Boeing modernization program to keep the B52 effective until there is a replacement or a decision to abandon manned bombers. Both structural and systems updating are involved, since there is no current replacement, and none in sight for several years; modernization keeps the B52 performance advancing to an optimum level of effectiveness. As you might expect, Bob flew in from Wichita in his own Twin Comanche, dropping Ann off in Nantucket

for the week on the way. "We broke even on the cost, and look at the convenience!" . . . Turning from the seminar to the mail bag, there were still lots of things going on during the year that are belatedly coming to our attention. **Elmar Piel**, Associate Professor at Norwich University (Northfield, Vt.), has been winning recognition. Author of "Gravimetric Gas Chromatography" in the *March Analytical Chemistry*, he was also signed up to speak to the ACS in Philadelphia. Subject, naturally, was "The Use of Transfer Tubes for Band Compression in Gas Chromatographic Recirculation." The Norwich chemistry professor also is the author of an article published abroad. The *Analyst*, the journal of the Society for Analytical Chemistry in England, published his dissertation entitled "A Bubble-Piston Flow Indicator with Constant-Rate Burette." And that's a well disguised set of titles for a self-styled "expert in Rhine and Mosel wines."

Franklin Fallwell, Jr. (who received his Ph.D. with us) is now a research specialist with the Organic Division of Monsanto. Joining the Resin Materials Application Group in 1960, he has been studying maleic and fumaric acids and esters, and their application to polymers. He is most interested in developing methods and techniques for the most efficient use of the maleate and fumarate esters in a vinyl acetate co-polymer chain. . . . **John Mahoney** has been appointed director of the Product Development and Service Laboratory for Merck and Company, Rahway, N.J. The laboratories develop new and improved products and formulations in food, feed, animal health, medicinal chemicals, industrial chemicals, agricultural chemicals, and magnesium products, and also provide technical and analytical services. John is listed in *Technique Revisited* as manager, Food and Feed Products. From that post he has had two promotions, becoming assistant director and now director of the laboratories.

John Sullivan, perennial president of the board of trustees of Dayton Art Institute, notes that he will be seeing a little bit of western New York, with a daughter entering Wells College in Aurora this fall. . . . *Gemütlichkeit* and class notes flow freely during the Christmas season. The very best Noel to you as you read this and an extra special "best of the season" to every one of you who responds with some news for the notes!—**Frederick J. Kolb, Jr.**, Secretary, 211 Oakridge Drive, Rochester 17, N.Y.

'39

Starting off the new year with a congratulatory item in a big way, **Manning C. Morrill** has been elected president of the Cryovac division of W. R. Grace & Company, New York. Manny, whose headquarters and principal manufacturing plant is in Spartanburg, S.C., succeeds Bradley Dewey, Jr., '40, who was appointed senior vice-president of the chemical group of Grace. Manny, who was one of the 25th Reunioners, certainly

deserves hearty congratulations for his successful rise. (And thanks for this news to **Martin Lindenberg**, who lived up to his reunion promise to send along news items, and did so with this item from the Wall Street Journal of November 2, announcing Morrill's promotion. In writing, Martin said that the four days of reunion seemed like two wonderful weeks, and two weeks which he is glad he didn't miss. Address for the Lindenegs: 244 Carroll Street, New Bedford, Mass.) . . . A letter from Sela Corporation of America announces that **Harold R. Seykota** has been appointed chief engineer of Sela of America (Nederland) N. V., and is located in The Hague, Holland. Hal, who also had made reunion, helps Sela provide engineering services and equipment to steam-reform hydrocarbons to make city gas, pure hydrogen, and other gases used to make ammonia, fertilizers, and methanol. Extra news item: Hal's son Edward is a member of the Class of '68 at M.I.T. . . . **Aaron White** wrote that while attending the Metals Congress in Philadelphia in October he met **Lewis Orrell**. Lew has recently become associated with the Department of Metallurgical Research of the Kaiser Aluminum and Chemical Company, Spokane 69, Washington. At that time, Lew was in the process of getting his family relocated from Pittsburgh. . . . Aaron also forwarded a clipping telling that Colonel **Leo A. Kiley** has been promoted to commander of the Air Force Cambridge Research Laboratories at Hanscom Field, Bedford, Mass. . . . More news as generated from faithful classmates who participated in Reunion activities: **Seymour Sheinkopf** also sent along the item about Leo Kiley, plus some more: **Esther Garber** was awarded a certificate of outstanding achievement for work in Army research and development. She was co-author of a paper entitled "Radiation Bodosimetry and Screening for Radioprotective Compounds," presented recently at an Army Science Conference held at West Point. She is stationed at Natick, at the U.S. Army Natick Labs. . . . **Arthur Olson** has been appointed research manager of the Kendall Company, fiber products division, Walpole, Mass. . . . Continuing with appreciated clippings from Seymour, a big item from the Boston Globe of September 9 entitled "Country Club Gold Mine" was devoted to Instron Engineering Corporation, Canton, Mass. President and co-founder of Instron is **Harold Hindman**. The excellent Globe article gave the history and story of Instron, makers of materials testing equipment.—**Oswald Stewart**, Secretary, 3395 Green Meadow Circle, Bethlehem, Pa. 18017.

'40

Two members of our class have sons who have entered the Institute this fall. Peter Hurley, '68, is the son of Professor **Pat Hurley**, and Jeffrey Stokes, '68, is also a third generation Tech man, being the son of our **Charles Stokes**, and the grandson of **James Currier**, '04. . . .

One personal note—your Secretary has a fourth son, **Stephen Thomas**, born October 28, 1964. This child was a planned baby, as is shown by the fact that with his birth the present returns on the reunion questionnaire reveal that there are exactly 3,000 (to slide rule accuracy) children per family for our class. . . . Hope to see you all at the reunion, and sometime prior thereto the Class Reunion Book will be available. Also, don't forget to make your contributions to our 25th Reunion Gift to the Institute.—**Alvin Gutttag**, Secretary, Cushman, Darby & Cushman, American Security Building, Washington 5, D.C.; **Samuel A. Goldblith**, Assistant Secretary, Department of Food Technology, M.I.T., Cambridge.

'41

Donald D. Scarff has been elected a vice-president of the General Electric Company. He is general manager of G.E.'s Lamp Division, with headquarters at Nela Park, Cleveland, Ohio. The division produces a complete line of lamps for home, industry, and commerce, as well as a line of refractory metals, glass, and quartz materials for industry and defense. During World War II, Don was associated with the design and development of aircraft radar and ordnance equipment for the armed forces. He joined the New England sales district of the Lamp Division in Boston and in 1948 was placed in charge of the district's sales promotion activities. He then moved to Nela Park as a member of the advertising and sales promotion section from which he was transferred to the East Cleveland Lamp Works in 1951 and moved to the South Central sales district at Memphis, Tenn., in 1952. Subsequent sales district moves saw him as manager of the district in Seattle, Wash., in 1953 and manager of the Pacific district in Oakland, Calif., two years later. He became manager of the Western sales region, composed of five large lamp department sales districts in 1957, then was promoted to general manager of the department in 1960, where he remained until his promotion to his current position as general manager of the Lamp Division. He also serves as president of the M.I.T. Association of Cleveland, on the board of trustees of the Cleveland Community Fund, and on the board of governors of the Associate Industries of Cleveland. He is a member of the Fenn College Corporation, the Illuminating Engineering Society, the Cleveland Engineering Society, the Cleveland Chamber of Commerce, and the Shaker Heights Country Club. He is married, the father of two children, and lives at 18928 Fairmount Boulevard, Shaker Heights, Ohio.

David S. McNally has recently been promoted to president of Amphenol with headquarters located at 1830 South 54th Avenue, Chicago, Ill. The principal products are connectors for the electrical and electronic industry. Dave's previous position was vice-president and general manager of the Western operation of Amphenol in Chatsworth, Calif. (San

Fernando Valley), principally engaged in the design, development and manufacture of intercommunications systems on space vehicles and missiles such as Titan III and Minuteman. Prior to that he was vice-president of Smith-Corona Marchant, now known as SCM Corporation. Dave's present promotion to president of Amphenol in Chicago has required a move of his family to the Chicago area and he now lives in Northbrook, Ill., with his wife Anne. He has a son, David D., who is a freshman at Northwestern University, and a daughter, Valerie A., who is engaged to a civil engineer from Cornell. . . . **Wallace E. Howell** has been engaged to seed clouds in the Fitchburg, Mass., area to try to alleviate the serious drought conditions. A recent article on Wallace's operations points out that he is one of the few men in this world who not only talks about the weather, but for a price can do something about it. From the office of his company, Howell Associates, Inc., at Hanscom Field's civilian air terminal in Bedford, Mass., he directs a small team of weather modification experts spread out on assignments from New York State to South America. It is their job to produce rain on order for companies and states by seeding moisture rich clouds over drought stricken areas. It was while doing research with a group at General Electric Company that the idea of cloud seeding on a commercial basis came to mind. Not long after the research began, New York City in 1949 asked for help in combatting a drought that had left water supplies at dangerously low levels. Wallace went to work as a consultant and while on the job made the New York papers every day for a month. The publicity led to more job offers. It was then he decided to establish the business now called Howell Associates, Inc. Some of the firm's best clients are reported to have been Cuban sugar producers who were lost in the Castro takeover. Since then he has found some other business applications that look promising. One of them is a hail suppression program to be carried out in co-operation with insurance companies who sell hail insurance to farmers. The program, it is claimed, would result in lower premiums due to a decrease in crop damage. However, there seems to be substantial controversy raging over these efforts to ward off hailstorms that knock the fruit off the trees. Opponents say that, while such seeding may stop hail, it also stops rain. Orchardists in Maryland, Virginia, Pennsylvania and West Virginia, calling themselves Blue Ridge Weather Modification, Inc., hired Wallace three years ago for such seeding with silver iodide. There has been very little summer rain all up and down the Blue Ridge and over into the Washington metropolitan area ever since. As a result, some farmers calling themselves Natural Weather, Inc., are organizing in each of the four states to seek legislative control of cloud seeding. So bitter has been the controversy that a Pennsylvania orchardist lost 200 of his prize trees to ax swinging vandals, and some of the ground generators which Wallace uses to shoot silver iodide into the air have been reported

stolen. Silver iodide is a tiny chemical crystal; about 10,000 make one grain of sand. Snowflakes falling through clouds full of freezing temperature water ice up and become hailstones. The silver iodide crystals "fool" the ice water in the clouds into becoming hailstones, also, but instead of a few big hailstones, form many tiny hailstones which melt before they reach the ground. Some claim that the seeding causes so many "little" droplets that they never reach the ground and thus cause a drought. As proof of this, many point to an experiment in Norway where they used to have too much rain every year and stopped it with massive doses of silver iodide. However, Wallace, who took his doctorate in cloud physics at M.I.T., states that there is nothing to the fears of the farmers that he is stopping it from raining. "We don't believe that it is possible to prevent rain," he said. "If it were, Robert Moses would have hired us for the World's Fair. Oh, it's theoretically possible to keep a cloud from raining. But you would have to use tons of silver iodide. We use ounces."

You will recall that in the November issue, this column carried a reference to Class of '41 members with progeny at M.I.T. We now find that besides **Howard Samuels**, **Hamilton Johnson** of Cuyahoga Falls, Ohio, also has a son, Mark H., who is presently a freshman at M.I.T. . . . **Vincent G. Kling** of Philadelphia has been selected to design the state medical-dental center in Farmington, Conn., by the board of trustees of the University of Connecticut. Vincent has won more than 80 national and civic awards and honors for buildings he has designed in this country and abroad. He is best known for his design of the Lankenau Hospital, Overbrook, Pa., which earned him the 1954 National First Honor Award in Hospital Architecture of the American Institute of Architects. He heads a staff of 150 persons. . . . **Edward G. Sherburne, Jr.** is project director for the American Association for the Advancement of Science, which was recently commissioned to co-ordinate production of the Science and Engineering Television Journal, a series of 20 half-hour telecasts designed to supplement the traditional means by which scientists and engineers keep abreast of developments in fields outside their own specialties. Sponsored by grants from the National Science Foundation and the Timken Roller Bearing Company, programs will be prepared at Channel 13 WNDT in New York and distributed by National Educational Television. Some 75 ETV stations are expected to carry the series beginning in March, 1965. Programs will cover a wide range of topics including such areas as air pollution, lunar volcanology, fiber optics and metallurgy.

Clarence E. Stevens, Jr. has been appointed vice-president in charge of manufacturing of Homelite Division of Textron, Inc., with headquarters at Port Chester, N.Y. Clarence has been the manager of the Homelite chain saw plant in Gastonia, N.C., since its opening in 1957. As vice-president, manufacturing, he will be in charge of Homelite operations both at Gastonia and at the com-

pany's plant in Greer, S.C., where Homelite generators, pumps, ride-on mowers and outboard motors are manufactured. He joined Homelite in 1947. . . . **Dana Story** is the author of a 128-page book entitled "Frame-Up" which has recently been published by the Barre Publishers of Barre, Mass. It is reported to be a salty book, the story of Essex, Mass., its shipyards and its people. "Frame-Up" is the stirring cry once heard daily in New England shipyards summoning all hands to raise and fasten the frames of a ship to its keel. It is reported that over 3,300 wooden ships were built in Essex yards, plus perhaps half again as many built for which no formal records were preserved. With each one of these vessels averaging at least 40 frames, the cry of "Frame-Up" became a symbol of a way of life in the community. Dana was born into a shipbuilding family and is a shipbuilder in his own right. His course of study at M.I.T. was naval architecture prior to his first job as a ship carpenter's helper in the James Yard at Essex. Later he became a hull draftsman at Sun Shipbuilding and Drydock Company in Chester, Pa., and chief draftsman at the W. A. Robinson Shipyard in Ipswich, Mass., during World War II. In 1945 he took over the family shipyard in Essex—the fifth generation to do so—where he still builds small pleasure craft.

Captain **John M. Ballinger** has relinquished command of the David Taylor Model Basin in Washington. He will join the Sun Shipbuilding and Dry Dock Company in Chester and live in Moylan, Pa. He was graduated from the Naval Academy in 1937 and served aboard the battleship 'New Mexico.' He received graduate training in naval architecture and marine engineering at M.I.T. He has served at the Philadelphia Naval Shipyard, on the Atlantic Fleet staff, with the Bureau of Ships and with the Defense Atomic Support Agency. He also has been deputy chief of naval research. His wife is the former Elizabeth Ann Massey, of Wynnewood. They have five children. . . . **Milton Sanders** of Stamford, Conn., has been elevated from engineering vice-president for local operations to assume the administrative, engineering, systems, and manufacturing responsibilities of the Bunker-Ramo Stamford operation. He joined the Bunker-Ramo Corporation as manager of customer projects in 1958 when it was known as the Teleregister Corporation. In 1960 he was appointed vice-president of engineering. Prior to joining the company, he was with the American Machine and Foundry Company. He holds 137 patents.—**Walter J. Kreske**, Secretary, 53 State Street, Boston, Mass.; **Henry Avery**, Assistant Secretary, 169 Mohawk Drive, Pittsburgh, Pa.; **Everett R. Ackerson**, Assistant Secretary, 16 Vernon Street, South Braintree, Mass.

'42

The most important bit of information I have about the class this month is to announce that **George Schwartz** has formed

a committee for the purpose of raising funds for our 25th Reunion Gift. The committee is composed of Lou Rosenblum, Bob Rines, Gene Brady, John Lacy, Al Goldis, Al Dengler, Mort Goulder and Bill Pease. The committee had its first meeting on October 28 at the M.I.T. Faculty Club. I will keep you informed of its plans as they are developed. One piece of information I can report is that the committee is convinced that our class wants to make a good showing and that all members of the class will be willing to participate in the program as it evolves. . . . In talking to **Bill Pease**, I found out that he is now director of engineering at the Space and Information Systems Division of Raytheon. . . . You will be interested to hear that the sons of **Bruce Anderson** and **Steve Sydoriak** entered M.I.T. as freshmen this year. . . . **Frank Staszsky** has been appointed vice-president and assistant to the president of Boston Edison Company. Frank has been with the company since 1940, when he first worked for it in the mechanical engineering co-operative course. . . . My final bit of news concerns **Pete Volanakis**, who joined Strathmore Paper Company as a mill chemist in 1946. In September, a special meeting of the board of directors elected him president of the company. I have not seen Pete for years, but I was impressed by the picture of him in the Springfield (Mass.) Union. It is encouraging to see that someone else in the class has a touch of gray in his hair!—**John W. Sheetz, 3d**, Secretary, Harvard Business School, Soldiers Field Road, Boston, Mass. 02163.

'43

Robert S. Reebie was promoted to vice-president in planning and development of the New York Central System. He also will have jurisdiction over the railroad's transportation office and economic research. He had been assistant vice-president of market planning and research since September, 1962. . . . **Benjamin Parran** has been appointed assistant vice-president and director of Xerox Corporation's Development and Design Engineering Laboratory. He will report to John H. Dessauer, Executive Vice-president of Research and Engineering. In his new assignment, he will be responsible for development and design engineering activities for new machine products for Xerox. For the past five years he has been manager of General Electric Company's Polaris program at G. E.'s Ordnance Department, Pittsfield, Mass. In his 13 years with G. E., he has been concerned, in addition, with product planning and research for a variety of military products including radar, sonar, communications, fire control and missile guidance systems. In 1958, he was assigned to the Pittsfield plant as manager of ordnance sales. Prior to that, from 1956 to 1958, he was a member of the company's Technical Military Planning Operation (TEMPO) at Santa Barbara, Calif., whose function is technical long-range corporate planning in military products areas. Before joining G. E., Ben was assistant to the director of research at

United Shoe Machine Corporation, Boston, Mass.

Eugene E. Magat was promoted to research manager at the Pioneering Research Laboratory of DuPont's Textile Fibers Department near Wilmington. He was formerly a research fellow at the Carothers Research Laboratory of the same department. He received his bachelor's degree with our class, and a doctorate from M.I.T. in 1945. . . . **John P. Longwell**, who received his doctor's degree with our class, formerly director of the Chemicals Research Division of Esso Research and Engineering Company, became director of the Central Basic Research Laboratory to provide full-time direction and to bring his technical experience and background to this activity. This move is in accordance with the expansion and increased emphasis being placed on basic research by Esso Research. . . .

Robert R. Everett, Vice-president of operations of MITRE, was the subject of an article in the Boston Globe in October, describing the huge non-profit corporation with which he is associated. MITRE, as many of you know, began as a group at M.I.T., changed to a group at Lincoln Labs then, six years ago, established its own headquarters at Bedford. Bob, who received his master's with our class, was in charge of developing SAGE (Semi Automatic Ground Environment).

Chatham Manufacturing Company, based in Elkin, N.C., introduced a process to weave fibers directly without first having to spin them into yarn. Called Fiberwoven, the process is being used by Chatham to make blankets for sale in department stores this fall. The process was invented by **Alexander Smith**, who received his doctor's degree with our class and was a professor at M.I.T. Although the use of the barbed needle isn't new, Fiberwoven's method is unique in the way the needles alternately penetrate and orient the fibers.

—**Richard M. Feingold**, Secretary, 266 Pearl Street, Hartford, Conn.; **John W. McDonough, Jr.**, Assistant Secretary, 525 North Lincoln Street, Hinsdale, Ill.; **Christian J. Matthew**, Assistant Secretary, Research Specialties Company, 200 South Garrard Boulevard, Richmond, Calif.

'45

Happy Reunion Year! Don't forget to send in your 20th Reunion registration together with the necessary fees and the questionnaire which will be a source of future Class News. Since you received your reunion flyer two weeks before this writing I have no details as yet about attendance. . . . **Jerry Patterson** in a letter dated October 19 reports the following: "My main reason for writing at this time is to pass on a real plug to the brethren of '45 for Wychmere Harbor Club next June. Libby and I spent a week at the Cape by ourselves in late September. Fall is truly the time to be at the Cape—no crowds, gorgeous weather, and considerably cheaper! But to get back to what I was saying, one day we went over to Snow Inn (Wychmere Harbor Club) to check on things. We are all set and Eleanor (the

proprietor) says they are looking forward to our return. They have been making many wonderful changes. There is a beautiful new dining room down at the beach house plus a lovely heated pool with glassed-in sunning area, dance floor by the pool and so on. I was very impressed! 1965 should be the best yet, so pass the word along." If your Reunion Committee propaganda has not been convincing, we trust that Jerry's candid comments will be the decisive factor in your attendance. It's only five months away!

Ed Stoltz wrote on Halloween indicating he and Elinor would attend providing they can find a babysitter. It is none too early to start looking, Ed. You and Elinor must attend for you might even win a prize with that 18-month-old, for I am certain the couple with the youngest child deserves a prize, undoubtedly there will be a prize for the oldest child as well! Ed reports that he spends most of his time in the air as manager of Johns Manville's midwest sales office in Waukegan, Ill. . . . The July issue of Honeywell's EDP employee paper contained a lead article on **Tom McNamara** and his moonlighting! "Just to look at Tom McNamara you'd never guess he was leading a double life. And it's all because of computers that got into his veins. During the day, Tom is a staff engineer in Newton, but one night a week he mounts the lecture platform at Northeastern University to teach a course in electronic data processing. Tom, who is chairman of Northeastern's newly created EDP Department, started teaching seven years ago." I might add that Northeastern's EDP Department now has a 13-man faculty and the department's students can earn an associate of science degree in EDP. Another moonlight activity of Tom's is our 20th Reunion Committee.

For the first time, I believe, we can report two class sons as members of the Class of '68. **Thomas Ming-Shih Chen** of Villanova, Pa., son of **Tung C. Chen** and **David R. Esten** of Alexandria, Va., son of **Randall D. Esten, Jr.** . . . **Cyril M. Harris**, President of the Acoustical Society of America, is a member of the International Committee for the Weizman Institute of Science 20th Anniversary Celebration.

. . . **Donald L. Stevens** has been appointed director, Information Systems Department of Philco's Communications and Electronics Division, a new position at Philco. Don had been with Thompson-Ramo-Wooldridge as director of product planning for new products and as general manager for industrial process control computer systems. Don was also associated with Sylvania in Boston and Burroughs in Paoli, Pa., and Pasadena, Calif.

It is with remorse that I must report the death of two classmates of our freshman year. **Elliott W. Reed, Jr.**, of Southport, Conn., died on April 23, 1964; **Bernard J. Farnsworth** of Newark, N.Y., died in a California auto accident on February 22, 1963. . . . **Ralph P. Cromer**, formerly of Long Island, is now with Sierra Pacific Power in Reno, Nev. . . . **Guy Gilleland** of St. Regis Paper here in New York, has traveled south to Winter Park, Florida. . . . **Al Werner** has moved to Huntington Bay, Long Island. . . . I failed to report on **Les MacCracken's** activities in the November

notes. Yes, his thoughtful June letter was misplaced during the summer sojourn! Les' letter should be quoted in part since he too is making an appeal for class news! "After two voided issues of The Review, there may be some management concern over whether or not the Class of '45 is still following along the well guarded paths of the Institute. In all seriousness, I like to see who is still around before I see the names in the deceased columns. I might paraphrase all this by asking, don't you fellows write anymore? Even I want to know about classmates' accomplishments when situations prevent me from going to a class reunion." Thanks for your well chosen words, Les. I might add that Les continues to teach at Lehigh University. One of Les' papers "Torsion Functors of Prediction Theory," was published in the documents of the International Conference on Circuit, Microwave and Information Theory held in Tokyo a few days after the Olympics closed.

Prexy **Dave Trageser** reports that **Max Ruehrmund**, now of Dover, Del., has agreed to be our 25-Year Gift chairman. We should all be happy that Max has accepted this arduous task for he is well qualified and will do an excellent job. . . . I spent a most enjoyable day with **Vince** and **Bobbie Butler** when I was in San Francisco in late October. Vince continues his activities and interest in the Naval Reserve. In fact, he was flying off to Seattle the very next day. As has been the case in the past, Vince managed to spend some time with **Pete** and **Lou Hickey** of Moorestown, N.J., when he was east for active duty this past summer. I am told that Vince did not get lost on the golf course this time! Again, Vince, many thanks for a wonderful visit to the Golden Gate.—**C. H. Springer**, Secretary, c/o Firemen's Mutual Insurance Company, 420 Lexington Avenue, New York.

'46

Happy New Year to all who have survived 19 years of post M.I.T. ups and downs. Let us hope that this new year contains more pleasant surprises than we Goldwaterites might have predicted last November. Dr. **Lewis T. Mann, Jr.** writes to say that his long association with the Harvard Medical School has come to an amicable end and that he is now a basic scientist at the West Roxbury, Mass., V.A. Hospital. His field of activity remains the same, tissue transplantation immunology, and he is also investigating the uses of metallocenes (ferrocene, cobaltocene, etc.) and their derivatives in biochemistry. Thanks for your letter, Lew. . . . I am happy to report that **L. Bates Lea**, wife Marcia, and three charming children are all fine. I had the pleasure of spending an evening with them in their Glenview, Ill., home a few months ago. Bates is assistant general counsel for Standard Oil of Indiana, as well as trustee for his town. . . . According to my records **James V. Hendel** walks off with first prize in the M.I.T. baby sweepstakes for '46. His son, Robert Charles Hendel is a member of the M.I.T. Class of 1968. . . .

Dr. Thomas F. Malone, Secretary for International Participation of the American Geophysical Union, is a member of the international committee for the Weizmann Institute of Science 20th Anniversary Celebration. **Roger P. Sonnabend** is also a member of the committee.

Walter A. Backofen has appeared in print again with an article entitled "The Nature and Consequences of Texture" in the *Journal of Metals*. . . . **Arnold Whitaker** is also in print with an article entitled "Integrating Spacecraft Electronics" in the August issue of *Space Aeronautics*. Arnold is currently responsible for directing project groups performing all aspects of systems analysis and integration for the LEM vehicle at Grumman. He started out at Grumman as a group leader in research control analysis on such aircraft as the F9F-6 and F11F-1. Previous to his present assignment he directed Grumman's systems studies and technical proposal on the TFX(N) missile system. Arnold earned his master's degree from Adelphi in 1956. . . . **Dr. Ju Chin Chu**, Professor of Chemical Engineering of Polytechnic Institute of Brooklyn, has recently been presented with a gold medal for the National Achievement Award and scroll of honor by the Ministry of Education of free China in Taiwan. . . . **John W. Lofthrop** has been appointed to the technical staff of Comstock and Wescott, Inc., Cambridge, Mass., consulting engineering firm. He was formerly with Avco-Everett Research Laboratories, engaged in gas dynamics and MHD power generation activities. . . . After M.I.T., **Robert J. Coates** served aboard PT boats in the Navy, attended Ohio Wesleyan University and received his master's degree from Xavier. Bob is deputy director of the Ohio Civil Rights Commission, head of the southwest Ohio regional office of the Commission, located in Cincinnati, and is also active in the Knights of Columbus, the Cincinnati Catholic Interracial Council, and the National Association of Inter-Group Relations Officials. . . . **Jack Sargent** was control system technical officer for the Nimbus Weather Satellite recently launched from the Pacific Missile Range in California by the National Aeronautics and Space Administration's Goddard Space Flight Center in Greenbelt, Md. Jack provided technical direction to the Nimbus Control System subcontractor. After M.I.T. Jack earned his M.S. in electrical engineering from the University of Maryland. He worked as an electronic scientist for the National Bureau of Standards before joining Goddard in 1963. He lives with his wife and two children in Washington, D.C. . . . That's all for this month. Please write us and let us know what you have been up to lately.—**John A. Maynard**, Secretary, 25 Pheasant Lane, North Oaks, St. Paul, Minn. 55110.

'49

Here, from my pile of reunion questionnaires, are some more personality sketches. **Lou Bucalo**, who so outra-

geously tried to claim he was the non-existent Phil Candy in the class character elections, is vice-president and a principal owner of a business which he lists simply as Kinemotive. Kinemotive Clamshuckers, Inc., maybe? Anyway, he claims he's coming down with ulcers soon and, just to speed the day, he is planning to start his very own business within five years. He is a devotee of horticulture, has gained a pound a year since we got out, has stopped smoking three times, can do 20 pushups, has had four jobs, travels 25,000 miles annually on business, and keeps up in his field by "work"! He, and his wife Aragona, have three children: Brian, 12, Diane, 8, and Randy, 5. They live in Holbrook, L.I., N.Y. . . . **John Horton** claims to have lost 10 pounds since 1949. If I read his questionnaire right, it's no wonder. He is vice-president of the Newark Brush Company, president of the Danline Manufacturing Company, and a director of Borste Fabriken Dan A/S. He keeps up in his field by praying and doesn't have ulcers—yet. Under Pets: Type and Number he answers: "Have one dog but she can't type and has trouble counting." He plays golf and tennis and can do 14-1/3 pushups. He owns a major part of his business but doesn't contemplate starting another one within five years. John lists no education other than Tech but he did tarry long enough to earn a doctor of science degree from the Institute. He and wife Jean live in Bernardsville, N.J. Their family consists of John P., Jr., 13, Peter, 11, Sarah, 8, and Melissa, 3.

Bob Walton, our beard-growing champion, is a computer programmer at the U.S. Naval Post-Graduate School. He traveled 3,700 miles (from Monterey, Calif.) to the reunion, hasn't stopped smoking, can do 25 pushups, and for pets, type and number, lists earwigs to infinity. He has moved eight times and held four jobs, gained 15 pounds, and doesn't have ulcers. . . . **Paul Weamer** is sales manager for Masslite, Inc., has held six jobs since graduation, has moved 10 times, gained 20 pounds, has two goldfish, switched to a pipe instead of abandoning the weed, can do 25 pushups, and plays golf and bridge. He travels 15,000 miles a year on business, is working in the field he studied at Tech, and keeps up in his field by reading in addition to reading 30 non-professional books a year. He and his wife Virginia would send their son Paul, 8, to M.I.T. but they don't think it is any place for the girls, Linda, 12; Virginia, 10; or Nancy, 3 months. They live in Arlington, Mass. . . . Press clippings are the source of what follows. **Bill Howlett** represented the Institute at the convocation and solemn mass celebrating the 175th anniversary of Georgetown University and the inauguration of Gerard Campbell as its 44th president. Bill lives in McLean, Va.

William Haddon, Jr. has been appointed associate director, division of Chronic Disease Services, New York State Department of Health, Albany. . . . **Lou Peloubet**, 97 Shore Road, Old Greenwich, Conn., has been named manager of Socony Mobil Oil Company's financial controls department. After leaving M.I.T., Lou earned an M.B.A. degree

in accounting finance from N.Y.U.'s Graduate School of Business Administration in 1958. He joined Mobil in 1960 as a financial analyst, became supervisor of corporate data in 1961, and supervisor of accounting research in 1963. He is a member of the Republican Town Committee in Greenwich, National Association of Accountants, American Institute of CPA's and the New York State Society of CPA's. Lou is married to the former Mary Jane Grier. They have two sons and a daughter. . . . **Clyde M. Adams, Jr.** has been appointed American Brake Shoe Professor of Metallurgy at M.I.T. This professorship was originally held, in foundry metallurgy, by the late Professor Howard F. Taylor.

Arthur D. Halenbeck of Malibu, Calif., has been named associate director of the system operations and test office in Aerospace Corporation's Manned Orbiting Laboratory (MOL) directorate. He will be particularly responsible for the management and direction of Aerospace efforts in connection with orbital support and mission control for MOL. The MOL is the nation's newest space program. It is designed to orbit two men in a working environment for periods up to a month. Mr. and Mrs. Halenbeck reside at 3551 Cross Creek Lane, Malibu, with their five children. . . . **Charles H. Brekus**, Assistant Director of process research and development at Western Electric's Engineering Research Center, has been awarded a fellowship to participate in the Stanford-Sloan business management program at California's Stanford University starting September 14. Charlie joined Western Electric in 1955 as an engineer at the company's Kearny works. He was promoted to department chief and transferred to the Buffalo, N.Y., plant in 1959 where he remained until September, 1961, when he assumed his present position at the center. He is treasurer of the Plastics Institute of America. . . . **Harrison Horn** was written up in the I.E.E.E. Circuit Theory Transactions in a biographical note. In 1961, Hap earned an M.S. degree in engineering science from Stanford University. He has worked at M.I.T., the Electronics Corporation of America, and the Link Division of General Precision, Inc. He is presently a senior research engineer in the genetics department of the Stanford University School of Medicine. He is a member of the American Association for the Advancement of Science, and the Optical Society of America.—**Fletcher Eaton**, Secretary, 42 Perry Drive, Needham, Mass. 02192.

'51

Because of his extremely heavy work load with both the Admissions Office at M.I.T. and his outside venture, **Dick Willard** has asked to be relieved of his role as our class Secretary-Treasurer. At a special meeting of our class officers, **Hank Spaulding** officially transferred these duties to me. Dick does want you to know his real regret at not being able to complete this assignment. . . . I have the cards which were sent out with the re-

cent class president's letter, but I have not yet put them into any particular order, so let me be surprised along with you and report them as I see them. . . . **Austin Hubbard** is with the 12th Coast Guard District (San Francisco) assigned as chief, Merchant Marine Technical Branch. . . . **Reuben Maine** is the executive vice-president of Electronic Concepts, Inc., designing and manufacturing marine and medical electronic equipment. . . . **Sam Rubinovitz** recently joined Edgerton Germeshausen and Grier as sales and marketing manager. . . . **Kurt Halbert** is with the Small Aircraft Engine Department, General Electric, in Lynn, Mass. . . . **John Lowry** (who pretty well shares the honors with Art Wasserman and **Gene Lubarsky** for getting the most information on one side of the post card) reports that he, "one wife, Desi, and two girls, Lisa and Kathy, (I hope that the girls are his daughters) moved into an old colonial farmhouse in Nichols, Conn. last year." He was cautious to add that the company moved, he did not change jobs. John is manager, Product Development, of U.S.I. Film Products, Division of National Distillers and Chemical Company. They have set up an R & D facility in Bridgeport where they are developing new plastic film products for a new division of the corporation. John adds that he would like to hear from classmates in the vicinity. . . . **Art Wasserman** wrote that he and his wife have their first child, Robert David, born September, 1963. In October, 1963, Art joined Westinghouse Astronuclear Lab in Pittsburgh where he is supervisor of the analog computer lab doing control system analyses for NERVA; he serves on the Safeguards Committee associated with the NERVA tests in Nevada and is project leader on short term control feasibility studies of advanced nuclear rocket reactor concepts for NASA, all of which Art feels is a "nice mixture of technical and administrative duties." Believe it or not, he still had room on the post card to add that he has been taking flying lessons, recently soloed cross-country, and plans to fly to the 15th Reunion! (Which makes this a good place to insert a plug and a request for volunteers to help on reunion committees.) . . . **Gene Lubarsky** has informed us that he is married to a girl of the Class of '51 but neglected to say which one. They have three sons and are living in Cedar Grove, N.J. Gene is the assistant manager of the Additives Department of Socony Mobil's Mobil Chemical Division. He has seen **Paul Grady** occasionally, and in general is surrounded by M.I.T. men. A nostalgic note: he claims to have hung up his baseball spikes in favor of golf.

Stan Jones is now a project engineer with the Raymond Corporation in Greene, N.Y. . . . **Thomas Stansfield, Jr.** is head of the Applications Research Department at National Cash Register (NCR) in Dayton where he is involved in the development of new applications for NCR's microencapsulation process. At home he has two boys and two girls. . . . **Gerry Ikelheimer** sent in a really newsy card, I will quote it in its entirety: "Married

Charlene Doris on April 26." What else is new Gerry? We really should extend congratulations, he was one of the diminishing breed of bachelors. . . . **George St. Pierre** has been promoted to full professor of metallurgy and dean of the Graduate School at Ohio State University . . . and has issued a challenge: they recently added their fourth child, Thomas, who weighed in at 11 pounds 4¼ ounces. . . . I think that I will save a few of the cards for the next time. If you will send me news to keep us all up to date on your activities, I won't complain about your handwriting or the problems that I have trying to decipher the cards. —**Howard L. Livingston**, Secretary-Treasurer, 358 Emerson Road, Lexington, Mass. 02173; **Forest Monkman**, Assistant Secretary-Treasurer, Walworth, P.O. Box 758, Greensburg, Pa.

'53

Sidney W. Hess, X, participated in a panel discussion of the National Industrial Conference Board on the topic, "The Use of Models in Marketing Timing Decisions." Sid is manager of operations research at Atlas Chemical Industries, Inc. in Wilmington, Del. After completing his degree in chemical engineering at Tech, Sid received a Ph.D. in operations research from Case Institute of Technology in 1959. In addition to applying quantitative techniques to the solution of marketing and operational problems, he has found time to develop an electronic computer technique for political reapportionment and redistricting, act as president of the Philadelphia Operations Research Society, serve as a scoutmaster, and teach his favorite subject at Drexel Institute. Sid and Grayce have settled into their new home at 324 Hampton Road in Wilmington with their three children Debbie, Peter, and Diana. . . . **Joseph Casanova, Jr., V**, has been appointed an associate professor of chemistry in the School of Letters and Science at California State College at Los Angeles. After graduation, he received both an M.S. and a Ph.D. from Carnegie Institute of Technology and was a Post Doctoral Research Fellow at Harvard. . . . **Richard Marciano, XV**, is responsible for specifications engineering at AVCO Research and Development, in Wilmington, Mass. Dick lives in Andover with his wife and three children. . . . **S. William Gouse, Jr., II**, is also teaching, here at Tech, and reports a family consisting of one wife, one son, one daughter, one cat and thirty tropical fish. . . . **John A. Trevett, VI-A**, is in product development with the Unholtz-Dickie Corporation. John and his family live on Hillwood Road in Old Lyme, Conn. . . . **John Stewart, XVI**, is in mechanical engineering with Edgerton, Germeshausen and Grier. Jack and his wife have four sons.

Thomas W. Lane, XIX, is a Lieutenant Colonel who now commands a unit of the Air Weather Service which operates a global weather data network for U.S. military and civilian flight activities. Tom recently was presented a U.S. Army certificate of achievement in Viet Nam. . . . **Orville**

L. Mageli, V, has been named director of research of the Lucidol Division of Wallace and Tiernan, Inc. in Tonawanda, N.Y. Dr. Mageli has published several papers in the fields of organic peroxides and fatty acid chemistry. . . . **Sven Treitel, XII**, after receiving a B.S. and Ph.D. in geophysics was a member of the M.I.T. Geophysical Analysis Group and spent a period of time in Cuba for Standard Oil of California in exploratory work. Sven is currently with Pan American Petroleum Corporation in Tulsa, Oklahoma where his main area of interest is the application of statistical communication theory to geophysics. . . . **Richard P. Simmons, III**, is in the news again. Dick has been promoted to assistant district manager of Republic Steel Corporation's Central Alloy District with plants in Ohio. Congratulations, Dick! . . . I met **Pete Bixler, X**, at a local beanery, and learned that he has left the ivory towers of the Institute for a go at private enterprise in a new plastics development company. How about some details, Pete? . . . All best wishes for health and prosperity in 1965.—**Norman R. Gardner**, Secretary, 100 Memorial Drive, Cambridge, Mass.

'54

Christmas and New Year's vacation provided a pleasant respite here in Cambridge, and we hope your holidays were equally enjoyable. . . . **Jack Preschlack** wrote from New York with several bits of news and a promise to be a regular contributor to Class News. In mid-1962 he went to London with McKinsey and Company, his employer since he received his M.B.A. from the Harvard Business School in 1958. While in London, Jack reports that he fell in love with the city and a charming young lady, Lynn Stanley of Ossining, N.Y. Jack and his wife returned to New York in March of last year shortly before the arrival of John, Jr. in June. . . . Now some news of a warmer time, June and the reunion. . . . The reports on our reunion have started to come in from **Bob Anslow**, Reunion Chairman. As you know, our 10th year get-together was held at the Curtis Hotel in Lenox, Mass., in June with the Class of '44 sharing the hotel with us. While disappointed that several who said they were going didn't show, Bob reported a good turn-out nevertheless. . . . **Sergio Chavey**, now with the copper interests in South America, came all the way from Santiago, Chile. We had no West Coast class members at the reunion this year, but Mimi and **Mike Ariens** did come all the way from Brillion, Wis. Other non-Massachusetts travelers to Lenox included **Bob Shaw** and Carol from Philadelphia, **Dick Foster** and Helen from Moorestown, N.J., **Joe Scheller** and Rita from Allentown, Pa., **Pete Peterson** and Carole from West Chester, Pa., **Art Kaplan** and Edith from Syracuse, N.Y., and **Nick Blazensky** and Sandra from Glastonbury, Conn. . . . From the New York area came Sydel and **George Dormer**, Marcia and **Dan Kokiell**, Gloria and **Mark Kaplan**, **Manny Nadler**, **Ryszard Degenszejn** and Nancy and

Dave Springsteen. We will have more on the reunion next month including a summary of the questionnaire results.

When last heard from, **Matt Baczewski** and **Diana** were in the process of buying a house. He is still at Aerojet General working in the Propulsion Systems Division on Minuteman. He sees Captain **John Giancola** quite often at Norton AFB. John is working toward his doctorate in metallurgy, courtesy of the Air Force. . . . Starting this month, and running for several issues, we will be bringing you the results of the questionnaire sent out for the 10th Reunion. Since over 250 returns were sent in, we have data from about one-third of the class. Statistics for answers to five of the questions have been compiled so far. In answer to the question concerning the men receiving M.I.T. degrees after their bachelors degree, 46 responded that they had received a master's degree and 20 said that they had obtained a doctorate from M.I.T. Out of 250, 84 have taken additional engineering courses in schools other than M.I.T. and 70 have taken non-M.I.T. courses in other subjects. In reply to "What is your marital status?": 29 are single, 6 divorced, 3 remarried, 1 widowed and the rest presumably are happily married. In toto, members of the Class of '54 have 247 girls and 267 boys. Breaking down the totals 94 couples have 1 girl, 48 have 2 girls, 16 have 3 girls; 1 has 4 girls and 1 has more than 5 girls; 90 have 1 boy, 66 have 2 boys, 12 have 3 boys; 4 have 4 boys and 1 has more than 4 boys. There are 2.38 children in the average Class of '54 family. . . . Remember, write and give us some news.—**Robert Evans, Jr.**, Secretary, 43 High Street, South Acton, Mass. 01771.

'56

Joe Huber wed **Julia Jane McMillen** of Barberton, Ohio last October. Joe and Julia will live in Cuyahoga Falls, Ohio, near Akron where Joe works for Good-year Aircraft. . . . In the September IEEE transactions on Space Electronics and Telemetry, it was noted that **Andy Viterbi** received his Ph.D. in electrical engineering from the University of Southern California in 1962. In 1963 he moved from the Jet Propulsion Lab of Caltech to join the faculty at UCLA. Andy has received several awards from the IEEE for his papers on telemetry and information theory. . . . In the September 25, 1964, Life magazine there was a feature article on **Bill Wolf**, who heads Wolf Research Development Corporation, a computer programing firm.

Our medical classmate, **Dr. Roku Yasui**, co-authored an article on computer analysis of electro-cardiographic wave form in the August 1964 American Heart Journal. Research work for the article was performed jointly by the Neurology Section of the Electronic Systems Laboratory, and the Biology Department of Tech with the Boston University Medical School under a grant by the National Institute of Health and the Massachusetts Heart Association. . . . Last June a number of

classmates received advanced degrees from Brooklyn Poly Tech. They include: **Frank Bader**, master's degree in mechanical engineering; **Dick Heimer**, master's degree in electrical engineering; **Louis Maisel**, Ph.D. in electrical engineering; **Art Sirkin**, master's degree in chemical engineering.—**Bruce B. Bredehoff**, Secretary, 16 Millbrook Road, Westwood, Mass.

'57

This month's column is dedicated to **Jim Chorak**, who forwarded the following letter. "So far as newsworthy items are concerned, my wife Gwen and I were blessed with the arrival of a bouncing baby boy on December 29, 1963. (Note the good fiscal planning! My neighbor, who is in Internal Revenue, is still angry.) James Michael is now getting to be a pretty big boy. He is our third—Miscelle Lynn is now six and Melanie Anne is three. I received my M.B.A. from the University of Southern California in June, 1963, and I am now proceeding on my doctorate in industrial management on a part-time basis. I am still with Hughes Aircraft Company, rapidly approaching my fifth anniversary. Most of that time I have spent in the corporate offices of Hughes, with the exception of 1962 when I was at our Tucson Division, heading up material pricing, master scheduling and advance planning for the division. Right now, my assignment is as manager of corporate materiel, and as such I have responsibility for corporate policymaking in the functional areas of purchasing, material control, inventory control, traffic and transportation, materials handling, etc. The job entails quite a bit of traveling as Hughes is quite active in the Aerospace Industries Association and the Electronic Industries Association. Recently I was elected vice-chairman of the Electronic Industries Association Materiel Procurement Committee. (I will become chairman next month.) This is an organization of nearly 100 electronic companies and has as its prime purpose keeping abreast of legislation, changes in government regulations, general problems between the prime and subcontractor, new management techniques, and so on. In addition to the association work, I have to spend quite a bit of time in Washington with the Department of Defense, the Federal Communications Commission, the Small Business Administration and other government agencies. One interesting assignment I was fortunate to receive was to serve on a panel of Secretary of Defense McNamara's Defense Industries Advisory Committee. This committee is established to advise the Secretary of Defense on suggested courses of policy and consists of representatives of the Department of Defense and industry. Our particular topic was "Socio-Economic and Geographical Considerations in Defense Procurement." This is quite a mouthful but it amounts to an analysis of how extensively the defense portion of the budget should be used for other than pure defense purposes. We concluded that it shouldn't!

"I have seen quite a few Tech men here

in Los Angeles. Specifically, John Crews, Ed Hasselmann, Jack Gibson, Dick Bruce and others, all from the Class of '57. We try to get together at least at M.I.T. Club of Southern California meetings. Being class representative of the local club, I try to get these guys to as many meetings as possible. Interestingly, we have quite a representation of the class at Hughes. **Paul Coble** has an office right around the corner from me where he, as a practicing patent attorney for the company, tries to "protect our creativity." **Ermanno Signorelli** and **Dick Stern** are both in Space Systems Division of the company working on such things as Surveyor, which will be the first soft lunar landing vehicle, and Syncom, which is bringing us the Japanese Olympics live on television. I see **Ed Schuman** every now and then at the Culver City plant as he is assistant procurement manager for Litton on a computer Litton is building for us for the TFX fire control system. I guess you could say that we have quite an alumni association, and I am sure that in this brief dissertation I have missed a couple of guys from the class that we see.

"We have recently moved into a new home and because of this, have been spending most of our time trying to landscape half an acre of adobe. My wife is pretty well convinced that my thumb is not very green. As a side line, I have turned my hand to writing and have had recent items in Aerospace Management magazine and in the Small Business Association of New England Bulletin." . . . Well, that is all for now. To all of you (and that includes A.R., a secret admirer in Philadelphia!), my best wishes for a happy and prosperous New Year—**Fredrick L. Morefield**, Secretary, 1-A Acorn Street, Boston, Mass. 02108.

'58

First item of this month's notes is a hearty vote of thanks from the class to **Pete Peterson** for his excellent job as class secretary and for all his efforts which made our Fifth Reunion such a rousing success and good time. We all appreciate your fine work, Pete, in keeping us posted on the activities of our many members. And thanks too, to your wife Marilyn, because we suspect a woman's helping hand at the typewriter in getting the notes prepared. Several promotions have occurred recently. Appropriately timed for November, Ocean Spray Cranberries has announced that **Earl Rose** became manager of production planning. Previously with a firm in Philadelphia, he has also remained active in music and was choir director and organist for their church. Earl and his family are now living in Plymouth, Mass. . . . **Herbert Calves** has been appointed general sales representative at the Philadelphia office of Joseph T. Ryerson. He has served with the inside sales staff at Ryerson since graduation. He is a member of the Philadelphia Cricket Club and lives in Flourtown.

William Bayer and a partner have formed Manchester Engineering, a consulting civil engineering firm, in Manches-

ter, Conn. Redevelopment work in Hartford and other nearby cities should keep their office hard at work on structural design of buildings and bridges. . . . And in Sheboygan, Wis., **Richard P. Linde**, A.I.A., has announced the establishment of professional offices in architecture. He plans to specialize in the design of churches and associated buildings.

On a business trip to Los Angeles for several days last April, I visited with Ed, '57, and **Toni Schuman**. It was quite eventful as during my stay the Schumans became the proud parents of a son, Eric Michael, their second child. Toni writes: "I'm really getting a big charge out of motherhood (it's a far cry from mechanical engineering) and adapting fairly well." As true Californians, they are planning a ski trip to Colorado, regarded as a paradise for the better skier but more affectionately known as aching Aspen by the novice. . . . Your secretary, following a brief stint with a small company in the Boston area, has been a sales engineer with Texas Instruments, Metals and Controls Division, in Attleboro, Mass., for the past two and one-half years. In October I transferred to Michigan as TI's resident sales engineer at Tecumseh Products Company, manufacturers of refrigeration compressors and one of our major customers. Jean and I have a son David, one and one-half now, and we are enjoying Michigan and Big Ten football at Ann Arbor. When you are in Detroit area be sure to call (even if it is from the airport as you are passing through). We are not too far away (phone 313:423-4140). And send in some news about your activities on your Christmas card this year!—**Michael Brose**, Secretary, 205 Pine Street, Tecumseh, Mich.; **Antonia D. Schuman**, Western Associate, 22400 Napa Street, Canoga Park, Calif.; **Kenneth J. Auer**, Midwestern Associate, 23105 Stoneybrook Drive, North Olmsted, Ohio.

'59

For months I've been promising to report on the reunion, but I regret that most of the details have been forgotten by now. As a result, I will have to resort to generalities. Our worst fears were realized Saturday morning when we looked at a thoroughly sodden Cape Cod through our rain-streaked windows. Minor factors such as nor'easters don't daunt hardy folks, though, and this was clearly evidenced when **Al Bufferd** and **Bob Rosenfeld** disappeared, clubs swinging, into the early morning haze which covered the golf course. Most of the 60-plus attendees had arrived by lunchtime, so our first full-scale gathering took place under the wind-whipped awnings just off the Chatham Bars beach. I suppose that I have painted a pretty grim picture, but you couldn't prove it by the '59ers. Revitalized by food and drink, they set off for tours of the area, bridge games, more golf, and the long-awaited bull sessions with classmates. True to Cape Cod form, the sun had no sooner "gone over the yardarm" than the forces reassembled at the free bar. The worst

weather in the world couldn't compete with that, and the party went into full swing. With good drinks and a delicious dinner under our belts, we sat back and relaxed while class election results were announced, "trophies" were awarded, and the questionnaire was discussed. Unlike a proper secretary, I was too busy having a good time to record all the trophy recipients, but one does stick in my mind: **Sergio Vladimirschi** and his wife, Liliane, won the "Most Distance Travelled to the Reunion" trophy hands-down by coming up from Sao Paulo, Brazil. There were many others but, so as not to embarrass the innocent, I won't risk any wrong identifications. "Business" gave way to dancing and drinking, and those in turn gave way to party-hopping after the Massachusetts magic hour of midnight. Hospitality was in full bloom, the parties were open to all '59ers, and the reunion rolled merrily into the wee hours of the morning.

Prayers to heaven and the United States Weather Bureau were answered Sunday, and we were treated to one of the finest days of the summer. Bathing suits were in prominence as we waded through a New England clambake with steamed clams, boiled live lobsters, corn on the cob, and cold watermelon; a special "dessert" was a concert by the CBI's singing waitresses. The rest of the afternoon was generally spent in relaxation on the beach, talking, sunning and watching some of the more energetic types like **Larry Boyd** skimming along on a Sailfish or **Ralph Alter** on water skis. **Marty Schiff** was the very picture of contentment as he sat out on the point, unsuccessfully going after "the one that got away." Meanwhile, back on the fairways, Al and Bob were still swinging their clubs. Finally, as the sun turned into the west, so also did the '59ers, and the Five-year Reunion came to a close. I would like to mention each of you who attended, but the list would be too long for this column. The Reunion Committee agrees that we had a great group there, and we hope you will be back for the next one in 1969. That also goes for the other 95 per cent of the class that didn't show up this year; if the next one is only half as good, it'll still be great!

. . . One of the highlights of the reunion was the unveiling of "Mr. Average Fifty-Niner," a composite of the 220 members of our class who answered Al Bufferd's questionnaire last spring. If you fit the mold, there's an 83 per cent chance that you've stayed in the field of your undergraduate studies, and you've probably had 1.7 different employers since the good old days at the Institute. You presently enjoy 2.55 weeks of vacation per year, and you've risen from an annual salary of \$6,300 to a figure of \$10,200 today. This is due in part to the fact that there is a 42 per cent probability that your name has appeared on 2.6 professional papers, and the 70 per cent probability that you've attended graduate school. Government service has been only moderately attractive to you, with a 2 per cent piece of your composite pie being served to the military and less than 2 per cent to the Peace Corps. Inci-

dentally, ROTC didn't do much for that 32 per cent in its 1.75 years under arms, because 45 per cent of it never wore officer's insignia.

In your personal life, there is a 72 per cent probability that you have 3.8 years of married life to your credit, and 0.85 children aged 2.6 years (slightly more likely to be female). There is a 72 per cent chance that your wife aided the financial cause by working two years at \$4,750 per year. 76 per cent of your composite being pays \$121 per month to rent a domicile, while the rest is paying off an \$18,000 mortgage after putting down \$5,000 on a home. The garage holds 1.14 cars, probably 1960 "low-priced" models. There is a high probability that you carry \$29,700 of life insurance in addition to hospitalization. You are charitable, donating \$205 per year to various and sundry organizations, and there's a 30 per cent chance that you are active in church organizations. Only 39 per cent of you admit political affiliation, and 70 per cent of that is Republican. You are more likely to have worn elbows than lung cancer, since 65 per cent don't like any form of smoking while 78 per cent enjoys an occasional "snort." Among the smokers, cigarettes, pipes, and cigars are popular in that order. Further, your non-teetotalling portion ranks beer, wine, scotch, gin and bourbon, and rye and vodka in order of favorites. To compensate for the vices enjoyed by your other part, 34 per cent of you engages in a physical fitness program. Also, you enjoy sports participation, ranking swimming, tennis, skiing, golf, sailing, bowling, rowing, and softball in decreasing order of popularity. In the same order, you prefer reading, music, shop, photography, bridge, autos, coins, and stamps as hobbies. Finally, 66 per cent of your average self spends 7.1 hours per week in front of the television set. Well, statistically speaking, this is you. It looks pretty good from here, and it suggests unbounded growth and development in your homes, businesses, and communities; a similar study in a few years will bear this out, I'll wager.

It's nice to talk about Mr. Average, but it is the individual that makes life interesting. I've bent your ear too long already, so I'll defer this most important aspect until the next issue. Keep the news coming, and let the class know how Mr. Specific is doing.—**Glenn W. Zeiders, Jr.**, Secretary, 3 Rose Avenue, Wattertown, Mass.

'60

I received a letter from **Ray Waldmann** who hoped that his letter wasn't "too long to go in verbatim. I thought it time the Phi Delts made print, at least for their own benefit if no one else's." His letter follows. "**Fritz Frink** is with his father's steel company in Seattle and is a father himself as we hear it. George Harrison, '61, works for papa Boeing in the same city; we keep hearing about a house-building sideline of his. It is probable the rumor of a red Alfa is true, and even more probable

that he is still single. A few miles south, in San Francisco, **Dick Julien** can be found in his father's law firm (after Stanford Law) if our informants are reliable. He is married, and our guess is an XKE if not a Superamerica, and a vice-president of the California S.C.C.A. To complete the West Coast contingent we go to L.A. where **Bill Larrabee** was headed after an M.I.T. master's, a year with Hughes and a Harvard M.B.A. Nancy and Bill had their first, Lee Anne, in July of 1963."

"Coming east we have Roy Waldheger, '61, at Union Carbide in Fostoria, Ohio. He is supposed to have a good thing; something about his being the only one who knows how to do something which is extremely important to the company. In Baltimore **George** and **Cam Stivers** have settled down with son Peter and the Martin Marietta Company. We hear of a new house and a master's earned evenings. In New York City we have a bad case of duplication. **Bill Morris** and **Mark Pratt**, both Course X at Tech, have both married girls named Sue from Westchester (named Follett and Bacon, respectively), have both gotten M.B.A.s from Harvard, and have both taken positions with chemical subdivisions of oil companies (Mobil and Enjay, respectively). Mark and Susie are ahead in one respect with one child named Stephen and another on the way—they live half way to Albany it seems. Bill and Sue have a cat and a bird, though; their apartment is on East 86th Street, so it may be neck and neck."

"The next stop is Europe. **Manuel Moreno** is expected to be in the Paris sales office of Cooper-Bessemer by now. After four hours of trying to find him there last summer we learned he was still in Ohio. We had better luck with **Tony Johnson**, who is currently stationed in Vicenza, Italy, with the Army. He put us up, showed us 'his' Venice, and may even stay in Europe after the service. He drives his Alfa 90 M.P.H. all the time. Both Bill Schonbein, '62, and I are still in the Boston area, and we are both with Arthur D. Little. Bill married Priscilla Whitney this past August, lives in Watertown and keeps busy with electronics research at ADL. Jane and I went to Europe this summer after I finished Harvard Law School. We still have our Cambridge apartment with a cat named Goony and the light of our life, a new M.G. I have joined ADL's regional economics staff. That takes care of my information, first hand, second or worse; we hope to see at least a few old friends at the reunion." Thanks for the letter, Ray. We will have more reunion information in the next column as well as the latest news from the "wireservices."—**John B. Stevenson**, Secretary, Partridgeville Road, Athol, Mass.

'61

Ira Jaffe was in town briefly last October, and we managed to find time for a half-hour chat at my office at M.I.T. Our president is well, enjoys his job with a Detroit law firm tremendously, and sends greetings to all. He seems to be doing a good deal of traveling. We discussed

reunion mostly, of which more in future columns. Meanwhile, how about some response from you on the subject? It takes more than class officers to put on a really successful reunion, and if anyone has any notions about what should or shouldn't be on the program, now is the time to voice them. . . . **John Sununu** recently had an article published in Electronics. The author's profile brings us up to date on John's activities since graduation. He has been designing dissipators, heat exchange systems and electronic equipment packages for the past four years at Astro Dynamics. His duties include assisting customers in using and designing Astro products into electronic systems. . . . Two '61ers received the M.S. degree in electrical engineering last June from the Polytechnic Institute of Brooklyn: **Robert Oppenheim** and **Henri Schnurmann**. . . . **Tom Hastings** began work for Digital Equipment Corporation, of Maynard, Mass., last November. . . . **Will Kenigberg** is working for an insurance firm in Chicago; he married Linda Dineen, date of marriage unknown. . . . **Mannie Smith** is working at the Newport News Shipyards.

Ray White, as previously noted in this column, is at Columbia, in that university's School of International Affairs, where he is now in his second year of study toward his master's degree. He has been honored by being named an International Fellow, and is thus part of a program organized to combine graduate training in various fields with advanced training in world affairs. Congratulations to Ray on this distinction! . . . Finally, a few words about the future authorship of this column. My present plans call for two years in Europe, beginning sometime in the latter half of this year. This pretty effectively rules out my doing the Class News in 1965-1966, and we are thus in need of an acting secretary. The job is anything but difficult, but it does take a few hours a month, preparing and typing (if possible) the notes from clipings, press releases, and dozens of letters which pile up weekly from classmates anxious to communicate. If someone can take over for me for the issues from November, 1965 to July, 1966, I would be most grateful. Of course a new secretary will be elected at the reunion, to carry the column on from there. Please write to me if you can help by doing some or all of the nine columns—important ones at that—which will precede our five-year reunion. . . . A Happy New Year to you all!—**Joseph Harrington, 3rd**, Secretary, 22 Hidden Road, Andover, Mass. 01810.

'62

The first piece of news is sad. **Stephen Woo, XVI**, was killed in a head-on automobile accident on the Southern State Parkway in Farmingdale, N.Y. He was on his way to classes at Brooklyn Polytechnic Institute Laboratories, where he was a Ph.D. candidate under a special grant in the fields of aeronautical and astronautical engineering. He was an

honor graduate of Boston Latin School, received a full scholarship to M.I.T., and graduated with high honors in our class. He is survived by his parents, Mr. and Mrs. Walter Woo, his brother David who is a freshman at the University of Massachusetts, and his brother Arnold, a student at the Prince School in Boston. I am certain that I speak for every member of the Class of '62 in expressing our deepest condolences to Steve's relatives and friends. For any who desire to write to his parents, the address is 67 St. Botolph Street, Boston 16, Mass. . . . The following information is gleaned from a newsletter concerning Course XXI grads. **Abe Aronow** has completed two years at Dartmouth Medical School and will continue his studies at the Harvard Medical School. . . . **Grant Beske** received his master's degree in metallurgy from M.I.T. in June, 1964. He is presently a research assistant in the department of metallurgy. . . . **Ronald Bierman** is a computer programmer for the Philco Communications and Electronics Division in Detroit, Mich. He helps Philco Computer users with various problems in the programming area. . . . **Deloss Brown** is in the United States Army. . . . **Gerson Carr** is completing his second year in the Louisville University School of Medicine, where he is secretary of his class. . . . **Alan Fuchs** is completing his second year at Harvard University in the philosophy department. . . . **Gregory Gabbard** is completing his work for the M.A. in English at the University of Texas and has been a part-time teaching assistant. . . . **Richard Hornby** is a graduate student at Tulane University, a candidate for the Ph.D. in drama. . . . **Donald Horner** is a Lieutenant, j.g., in the Navy, assigned to the 'U.S.S. Gridley,' in the Operations Department. . . . **Walter Koetke** is teaching at Lexington High School; advanced placement geometry and data processing. . . . **George Lakoff** is continuing his graduate work in linguistics at the University of Indiana. He was married in September 1963. . . . **Harrison McCraw** received his M.A. in English in June, 1963, from Tulane University and has completed his course requirements for the doctorate. He plans to spend next year preparing for his qualifying examinations in November and working on his doctoral dissertation, probably in the Elizabethan or medieval field. He was married in June, 1964. . . . **Herbert Odom** is a graduate student in the history of science in the Harvard Graduate School of Arts and Sciences. This year he won the Bowdoin Prize for his essay, "The Departure of God from the Heavens of the Enlightenment." . . . **Frederick Page** is a graduate student in political science at M.I.T. . . . **Victor Schneider** held a fellowship at Stanford University in electrical engineering in 1962 and entered the graduate school of Northwestern University in electrical engineering in 1963. . . . **Don Shakow** will enter the University of California Graduate School this fall to work on rural development in underdeveloped areas. He completed a year's study at the University of Pennsylvania in economics and then arranged to work on an agricultural set-

tlement (kibbutz) in Israel for five months. While there he studied agricultural science at the Hebrew University in Jerusalem. . . . **Peter Shrier** is completing his second year at the University of Vermont College of Medicine. . . . **Robert Wilhelm** entered the Harvard Business School in September 1962. He was elected a Baker Scholar at the end of the first year. This award is reserved for the top 2½ per cent of the class. He is also a member of the Century Club, an honorary organization, and is now working for Standard Oil Company in New York.—**Jerry Katell**, Secretary, c/o Oceanic Properties, Inc., P.O. Box 2780, Honolulu, Hawaii.

'63

In November, the class officers met to approve plans for the Josh White Concert this month. If all goes as planned, the class treasury will be in good shape for a few years. News about classmates still around Cambridge: **Jim Champy**, **Robert Efimba**, **John Brach**, **Jim Burke**, **Kent Groninger**, **Rick Goodman**, **Jack Harmon**, and **Bill Jessiman** are all studying and working in the Civil Engineering Department. . . . **Lenny** and **Yvonne Ehn** have returned to Boston from Stanford where he has received his masters in construction management. They now have a 9-month-old baby girl. . . . **Bob Morse** is at Harvard Law. . . . **Mike Greta** is coaching lightweight crew. . . . **Kent Groninger** is an assistant coach for freshman basketball. . . . **Terry Foster** is working on his Ph.D. in structural design at Berkeley. . . . **Dick Males** has joined the Peace Corps and is teaching in Chile. **Dennis Buss** married **Karen Hodges** last June. He is teaching at B.U. and working on his Ph.D. at the Institute. . . . **Mike Fensin** is a research assistant in Mechanical Engineering's Fluid Lab and is working on his Ph.D. . . . **Richard Trilling** got his M.S. in physics at Syracuse and is planning to go on. . . . **Bud Risser** married **Fran Walker** last month in Wisconsin. . . . **Tom Bogan** will marry **Beth Chapin** in June. Our Loan Fund is in action and is helping two students at present. Let's keep the money trickling in. And send news.—**L. Robert Johnson**, Secretary, 11 Myrick Street, Allston, Mass.

'64

More cards came in over the summer of the whereabouts of various members of our class, so here we go. . . . **Gail Ulrich** of Devils Slide, Utah, is working for North American Aviation.

John Van Saun of Rochester, N.Y., is at Carnegie Tech with an assistantship. . . . **Doug Veenstra** of Detroit, Mich., is in graduate school at Purdue with a NSF award. . . . **William Wallace** of Milton, Mass., is at M.I.T. with a teaching assistantship. . . . **Dennie Walstad** of Franklin Park, Ill., is studying at Chicago and working for Motorola. . . . **Ronald Walter** of New York City is at M.I.T.

with a research assistantship. . . . **Magne Wathne** of Sandnes, Norway, is at M.I.T. with a research assistantship. . . . **William Watson** of Camden, Ala., is at M.I.T. with a NSF award. . . . **Charles Wayne** of Springfield, Va., is in graduate school at University of Pennsylvania and working for the National Security Agency. . . . **Robert Weggel** of Arlington, Mass., is in graduate school at Harvard. . . . **Robert Weinberg** of Pittsburgh is in graduate school at M.I.T. . . . **Alan Weinstein** of Roslyn Heights, N.Y., is at Berkeley with a fellowship. . . . **Henrik Wessel** of Sandvika, Norway, is working with Wessel AS in Norway. . . . **Robert Wild** of Syracuse is in the Peace Corps in Ecuador. . . . **John Williams** of Manchester, Conn., is at M.I.T. with a research assistantship. . . . **Michael Williams** of Oklahoma City is working for Hughes Aircraft Company. . . . **Walt Winchall** of Detroit is at Harvard Law School. . . . **Allen Wirzburger** of Plymouth, Mass., is in the Navy. . . . **Warren Wiscombe** of Phoenix, Ariz., is at Caltech with a NSF Fellowship. . . . **David Wolfson** of Miami, Fla., is in graduate school at the University of Kansas. . . . **Edward Wolcott** of Hillister, Calif., is at Harvard Business School. . . . **Thomas Wood** of Barre, Vt., is working for the Springfield Armory. . . . **Hubert Wright, Jr.** of Cambridge, Mass., is working for AVCO in Wilmington, Del. . . . **Takeo Yasuda** of Kawasaki, Japan, is working for Ajinomoto Company, Inc., in Japan. . . . **Mrs. Chen-wan Liu Yen** of Taipei, Taiwan, is taking a year off to have a baby. . . . **Ralph Zimmerman** of Vineland, N.J., was married on August 22 and is now at M.I.T. with a research assistantship. . . . **Steven Zucker** of Charleston, S.C., is in graduate school on a NSF Fellowship.

William Ashby of Florence, S.C., is a captain in the USAF and working for the American Health Organization on research in food technology in Brazil. . . . **Derek Baker** of Victoria, B.C., is in the Canadian Navy. . . . **Nicholas Baracos** of Michigan is working for the Ford Motor Company. . . . **William Bennett** of Sydney, Australia, is working for the Colonial Sugar Refining Company down there. . . . **Barry Blesser** of New York City is at M.I.T. on an NSF Fellowship. . . . **Allan Bobko** of Middletown, Pa., was married to **Patricia Fetterolf** June 20 and is now studying math at the University of Colorado. . . . **Mrs. Norma Bogen** of Lexington, Mass., is an associate of Bogen & Associates, Boston. . . . **Peter Broek** of Zwolle, Holland, is in business somewhere. . . . **Giorgio Bruschi** of Cambridge, Mass., married **Trudy Hohnacker** of Wilton, Conn., September 26, and is now on the staff of the M.I.T. Instrumentation Laboratory. . . . **Leo Cardillo** of Flaworth, N.J., is working for the government as an EE man. . . . **William Carithers, Jr.** of Atlanta, Ga., is in grad school at Yale. . . . **Thomas Cerny** of Oak Brook, Ill., is in business school at Stanford. . . . **Jerry Chichester** of Seattle, Wash., was married in Denmark in July and is presently in Europe. . . . **Thomas Daniel** of Rochester, N.Y., is working for the Peace Corps. . . . **Michel Delsol** of

Caracas, Venezuela, is engaged to **Cheslye Larson** and is now at Cornell Law School. . . . **Jason Fane** of New York City is at Harvard Business School. . . . **Lawrence Feiner** of New York City is in grad school and a teaching assistant at M.I.T. . . . **James Gerber** of New York City is at the University of Pennsylvania on a Ford Foundation Fellowship. . . . **Eric Greenwell** is now working for General Electric at their Atomic Products Operation in Richland, Wash. . . . **Wayne Hamann** of Dickinson, N.D., is a research engineer at Ford. . . . **Michael Harter** of Bethlehem, Pa. is working for Bethlehem Steel. . . . **Lester Hendrickson** of Streator, Ill., is working for AT&T. . . . **Richard Joos** is on a Fulbright scholarship in Rome, Italy. . . . **John Kershaw** of Syracuse, N.Y., is an instructor at the Air Force Academy in Colorado. . . . **Bo Kumlin** is a section leader at Stal-Laval Turbine Company. . . . **Larry Langdon** of Juneau, Alaska, is at M.I.T. with a NSF Fellowship. . . . **Robert Lenox** of Newton, Mass., is in medical school at the University of Vermont. . . . **Guy LePechon** of Paris is a chemical engineer for Rhone-Poulenc. . . . **Richard Lipes** of East Point, Ga., is in grad school at Caltech. . . . **Robert Merrill** of Stoneham, Mass., is an assistant professor at Berkeley. . . . **Thomas Perrone** of Haverhill, Mass., is now in the military. . . . **Martinelli Piero** of Lucca, Italy, gave no plans. . . . **Robert Popadic** of Trumbull, Conn., is at Harvard Business School. . . . **Guillermo Prada** of Bogota, Colombia, is working for IBM in Syracuse. . . . **Ira Prenskey** of Newton Center, Mass., is in grad school at the University of Connecticut. . . . **Alan Rinsky** of Cincinnati is in grad school and a research assistant at M.I.T. . . . **William Scheftner** of Mequon, Wis., is in med school at the University of Wisconsin. . . . **Daniel Shapiro** of Brooklyn is a research assistant at Massachusetts General Hospital. . . . **Amiel Shulsinger** of Brooklyn is in grad school and a research assistant at Carnegie Tech. . . . **Jerry Skelton** of Elberfeld, Ind., is a research engineer for Avtonetics. . . . **Richard Soland** of Cambridge, Mass., is on the staff of Research Analysis Corporation. . . . **James Spencer** of Independence, Mo., married **Nancy Casella**, '64, and is now at M.I.T. with a research assistantship. . . . **Nancy Casella Spencer** married **James Spencer**, oddly enough, and is working as a programmer at M.I.T. . . . **Richard Stimets** of Wellesley, Mass., is in grad school. . . . **Juanita Tonso** of Antioch, Calif., is a math teacher at Pacifica High School. . . . **Julius Varallyay** of Cambridge, Mass., is working for Haley and Aldrich, Inc., a firm of consulting soil engineers. . . . **Gordon Wassermann** of Patchogue, N.Y., is in grad school at Princeton with a NSF Fellowship. . . . **James Wasvary** of Little Falls, N.J., is also at Princeton on a fellowship. . . . **Jerome Weiner** of Fairlawn, N.J., is in grad school at M.I.T. . . . **William Wilson** of Spokane, Wash., is in the Air Force. . . . and I, classmates, am eagerly awaiting further news from you as I lie buried in work here at Harvard Law.—**Ron Gilman**, Secretary, Dane Hall 204, Cambridge, Mass. 02138.

Club News



A New Anthropological Museum in Mexico City Is Included in Plans for This Year's Fiesta

The 17th annual M.I.T. Fiesta in Mexico will be held March 11, 12 and 13, Alvino Manzanilla Arce, '31, President of the M.I.T. Club of Mexico City, announced at a meeting October 29. In addition to traditional features of the Fiesta such as the visit to the Home Show to watch Mexican artisans at work, and the 'Noche Mexicana' celebration, a visit is planned this year to the newly opened Anthropological Museum in Chapultepec Park. An outstanding group of alumni and faculty from the United States is expected to attend. (See page 20.)

Initial planning got under way at the

October 29 meeting of the club, hosted by Mr. and Mrs. Miguel Santalo, '54, for 26 alumni and wives. Active on the 1965 M.I.T. Fiesta in Mexico Committee are Mrs. Conchita Zambrano de Lobdell, Executive Vice-president of the M.I.T. Club of Mexico, Clarence Cornish, '24, James Rattray, '48, Armando Santacruz-Baca, '54, Antonio Sacristan, '60, and Richard Bolin, '50, Chairman of the Committee. —Armando Santacruz-Baca, '54, Secretary, Cerrada de Amores 24, Mexico, D.F. 12, Mexico; Richard L. Bolin, Fiesta Chairman, Sierra Fria 384, Mexico 10, D.F.

Southwest Florida Club Enrolls Men From '99 to '63

The newly formed M.I.T. Club of Southwest Florida had an excellent first year. Twenty-five alumni have joined, spanning 64 years from David H. Hayden, '99, to Stuart Solin, '63. Representatives of the Institute were speakers at two of the six meetings. M. Bryce Leggett, '40, of the Admissions Office, reported on current and future undergraduate registrations and Frederick G. Lehmann, '51, Secretary of the Alumni Association, spoke on recent developments in curricula and facilities.

Officers and executive committee members re-elected for the second year are: President, Lowell L. Holmes, '23; Vice-president, Peter R. Pettler, '54; Secretary-Treasurer, David A. Eberly, '49; and members of the executive committee, Bernard E. Groenewold, '25, William R. Grunwell, '28, and Howard E. Hartman, '46. . . . The first meeting was held on November 16, with Donald G. Severance, '38, Executive Vice-president of the Alumni Association, addressing the group.—David A. Eberly, '49, Secretary-Treasurer, 2315 Goldenrod Street, Sarasota, Fla.

Lehigh Valley Men Go See the Grace Iron Mine

On November 13, the M.I.T. Club of the Lehigh Valley held its annual fall meeting at the Grace Iron Mine of Bethlehem Steel in Morgantown, Pa. This deep mine has workings below 1,000 feet and is one of the most modern in the country. The tour included inspections of the underground mining activities and of the concentration plant above ground where crude ore is prepared for further refining. A steak and lobster dinner was served at the Grace Mine Hospitality House at the conclusion of the tour.—Frederic W. Hammesfahr, '40, Secretary, 2260 Woodlark Circle, Bethlehem, Pa.

Hoosiers Enjoy a Report On Mother Earth's Age

On October 19 Professor William H. Dennen, '42, entertained and informed the Indiana Association with a report of the work going on at the Institute in geology and geophysics, with emphasis on discovering the age of the earth. The dinner, held at the Marott Hotel, was attended by 34 alumni and wives: John H. Babbitt, '17, Howard E. Bell, '61, Harold J. Brown, '30, Fedia R. Charvat, '56, David W. Dennen, '54, Eleanor E. Dorste, '47, Thomas I. Dowling, '26, Donald W. Fork, '42, A. Paul L. Hotte, '42, Marshall D. McCuen, '40, Howard S. Morse, '03, Alan L. Morse, '21, Robert F. Palermo, '57, Robert E. de Raimes, Jr., '37, Charles B. Reimer, '48, Archie Tower, '44, Frank J. Travers, '23, and John B. Welch, '13. Also in attendance were a prospective student and his father.

Thomas C. Dorste, '47, has arranged for an architectural colleague of his to speak to us on Thursday, February 4. H. Rowell McLaughlin will speak on "A Future for the Past" or how some Americans are restoring and preserving worthwhile architectural specimens of bygone eras.—Thomas G. Harvey, '28, Secretary-Treasurer, 5685 North Delaware Street, Indianapolis, Ind.

Wulff and Carpenter To Visit Detroit Club

A dinner meeting for the M.I.T. Club of Detroit is scheduled for Tuesday, January 26. Speakers will include Professor John C. G. Wulff of the Metallurgy Department at M.I.T. and Donald F. Carpenter, '22, President of the Alumni Association. For additional information about time and place, please contact Frank G. Rising, '59, telephone 646-6789.—John C. Erickson, Publicity Manager, 2025 Vernier Road, Grosse Pointe Woods, Mich. 48236.

Two Empire State Clubs Hold a Joint Meeting

Plans for the 1964-1965 season were discussed in August at a meeting of the officers of the Buffalo and Niagara Falls Club. Attending were William H. Latham, '26, President; Charles Diebold, 3d, '58, Vice-president; Matthew N. Hayes, '36, Secretary-Treasurer, and several of the directors of the Club. Plans included a joint meeting with the Rochester Club in October and plant visits to the Harrison Radiator Company in January and the Bethlehem Steel Company in March. The annual business meeting is scheduled for May, 1965.

The joint meeting with Rochester was at the Apple Grove Inn in Medina, N.Y., on October 22; approximately 100 member and their wives attended for dinner and a lecture. Whitworth Ferguson, '22, who had arranged for the speaker, introduced Dr. Walton A. Rodger, Manager of West Valley Operations of Nuclear Field Services, Inc. Dr. Rodger described briefly the planning, processing and safeguards of the plant now under construction for the reclamation of nuclear fuels.—Matthew N. Hayes, Secretary-Treasurer, 78 Northledge Drive, Buffalo 26, N.Y.

Delaware Valley Club Is Updated on Archaeology

The M.I.T. Club of the Delaware Valley held its fall dinner meeting on October 20 at the University of Pennsylvania Museum. Dr. George F. Bass, Assistant Professor of Classical Archaeology at the University, gave an illustrated talk on "The Development of Underwater Archaeology." Dr. Bass described the University Museum's underwater excavations off the coast of Turkey, underway since 1960, and the various space age devices developed and used to hunt for ancient wrecks. These methods uncovered the world's oldest known shipwreck, dating from 1200 B.C., and a Byzantine ship of the Seventh Century A.D. Dr. Bass also described the "Asherah," a two-man submarine built for underwater archaeology, and the mapping of wrecks by underwater photogrammetry.—John B. Murdock, '41, Secretary, 15 Runnemede Avenue, Lansdowne, Pa.

Professor Freeman Speaks At Ontario Club Meeting

The M.I.T. Club of Ontario held its first meeting of the 1964-1965 season October 19 at the Rosedale Golf Club, at which time Professor Emeritus Ralph E. Freeman was our guest. He spoke on the economic outlook in North America and answered questions from a large audience, including wives of alumni.

The Ontario Club plans three other meetings this season, including one during the Christmas holidays with students presently attending the Institute. A similar meeting last year was a great success, enabling alumni to get a student's viewpoint of life at the Institute today.—Michael M. Koerner, '49, Secretary, 14 Ridgfield Road, Toronto, Ontario, Canada.

M.I.T. Club Meetings Throughout the Nation

PRESIDENT DON CARPENTER, '22, of the M.I.T. Alumni Association, will speak at many of the M.I.T. Club meetings scheduled for January and February.

The list of meetings as reported to The Review in time for listing in this issue follows. Please consult the secretary for further details.

City	Date	Speaker	Secretary
Minneapolis	January 11	Donald F. Carpenter	Keith R. Johnson
Milwaukee	January 12	Donald F. Carpenter	K. L. Homes
Chicago	January 13	Donald F. Carpenter	John Kunstader
Boston	January 14		Bruce B. Bredehoft
St. Louis	January 18	Donald F. Carpenter	Ronald H. Lieber
Philadelphia	January 19	Walter Rosenblith	John Murdock
Kansas City	January 19	Donald F. Carpenter	Peter Buckley
Tampa-	January 22	James R. Killian	D. J. Athan
St. Petersburg			
Washington	January 26	H. S. Mickley	M. J. Block
Detroit	January 26	John Wulff and Donald F. Carpenter	J. E. Schwartz
Cleveland	January 27	John Wulff and Donald F. Carpenter	W. A. Rajki
Tulsa	February 8	Donald F. Carpenter	A. W. Chandler
Fort Worth-	February 10	Donald F. Carpenter	L. B. Freese and
Dallas			John Freiburger

Hartford Alumni Discuss Computers With Prof. Miller

The M.I.T. Club of Hartford met last November 4 and heard Professor Charles L. Miller, '51, Head of the Civil Engineering Department at M.I.T., describe the use of computers as teaching tools for engineering experience. He strongly stressed that the department is not teaching computer use, but providing engineering experience through the use of computers. He also pointed out that the Civil Engineering Department's present research program is not necessarily for new knowledge, but rather for improved methods of engineering. A lively discussion followed.

Those attending the meeting were: Mrs. Charles L. Miller, William A. and Mrs. Bayer, '58, Theodore A. and Mrs. Earl, '35, Paul S. and Mrs. Cianci, '56, Arthur K. Deming, '35, Alan W. and Mrs. Crowell, '25, William J. Deane, '52, Alfred C. Garrigus, '21, Thomas D. Green, '26, John W. Hartigan, '56, Burton M. Kahn, '55, Kenneth K. Klingensmith, '47, Robert D. Morton, '37, Robert R. Mott, '48, Peter W. Plumley, '50, Raymond A. St. Laurent, '21, John H. Scoville, '11, Francis E. Stern, '16, Robert J. Walter, '57, Bruce J. Weston, '53, John C. Wilson, '52, and Walter S. Wojtchak, '37.—Paul S. Cianci, Secretary, West Hartford, Conn.

Kanawha Valley Alumni Hear Professor Kurtz

Professor Edward F. Kurtz, Jr., '54, of the Department of Mechanical Engineering at M.I.T. was the guest of the M.I.T. Club of the Kanawha Valley for a dinner meeting at Charleston, W.Va., October 30, with wives and guests in attendance. Dr. Kurtz had just completed a week of high school visits in Kentucky and West Virginia. Using an excellent set of colored slides to show the physical changes at the Institute, he drew from his teaching and tutorial experiences to tell of the curricular and philosophical changes taking place.

Club President Ralph L. Kelly, Jr., '42, presided. The nominating committee report was presented by Robert S. Leithiser, '55, and resulted in the election of the following for the coming year: President, John H. Howell, '35; Vice-president, Wilburn H. Hoffman, '46; Secretary-Treasurer, Daniel G. Hulett, '42; and members-at-large, Joseph C. Jeffers, Jr., '40, and Richard P. Little, '42. Alumni present included Alexander S. Giltinan, '47, Philip A. Hendee, '26, Robert C. Payne, '62, John T. Sox, '61, and Benjamin T. Woodruff, '36.—Daniel G. Hulett, '42, Secretary-Treasurer, 650 Gordon Drive, Charleston, W.Va. 25314.

New Club Opens Season; Dean Burchard in Dallas

Alumni affairs in the area are changing! Dallas has come of age and no longer shares a club with North Texas. We now have our own Dallas M.I.T. Club. President Robert E. Harrison, '47, of the Dallas Morning News, is supported by Vice-president Robert L. Lichten, '43, of Bell Helicopter, and Secretary John J. Freiburger, '45, of Holiday Cleaning and Laundry. These officers have planned three outstanding programs for this season. The first fall cocktail hour and dinner was held November 4 with 45 alumni and their wives in attendance.

Professor Glenn C. Williams, '42, of the M.I.T. Department of Chemical Engineering, spoke on "Recent Developments in Chemical Engineering Education and Research at M.I.T."

The following alumni and wives were at the first meeting: Edmund E. Weynand, '50; Jonathan A. Noyes, '12; George Kohfeldt, '25; Irwin J. Grossman, '52; J. Herschel Fisher, '40; Samuel S. Elkins, '23; Vincent S. Haneman, Jr., '47; E. G. "Ray" Senter, Jr., '17; William B. Scott, '44; R. H. Parekh, '39; Louis B. Wadel, '46; Charles F. Terry, '53; Lawrence E. Sayah, '56; William M. Gilker, '03; Philip K. Bates, Jr., '60; Robert S. Allan, '55; Frank F. Bell, '10; James E. Eckert, '59; J. Russell Clark, '29; Virgil B. Pettigrew, '47; John J. Freiburger, '45; Robert L. Lichten, '43; Robert E. Harrison, '47, and Mr. and Mrs. Cecil H. Green, '23.

The Club's Christmas vacation meeting with prospective students, teachers, parents and other friends of M.I.T. was to be a luncheon program at the Chaparral Club atop the Southland Life Tower. . . . M.I.T. has been prominent in our local newspapers. Dean Emeritus John E. Burchard, '23, a house guest of Mr. and Mrs. Cecil Green, '23, spoke at a seminar of the Texas Society of Architects on the question, "Is There an Antidote for Ugliness?" and moderated a discussion of "Civic Beautification" at Southern Methodist University.

Vice-president Lichten is working on the finishing touches of the new club's constitution and by-laws, which will be sent to all prospective members.—John J. Freiburger, '45, Secretary, 5540 Preston Road, Dallas 5, Texas.

South Texans Hear Report On Admissions Policies

The October 22 meeting of the M.I.T. Club of South Texas was held at the Memorial Drive Country Club, Houston. Eugene R. Chamberlain, Associate Director of Admissions at the Institute, told us that the Institute has no geographical quota system, favors the "soft sell" approach, and admitted 35 girls into the freshman class of 900.

Professor Richard Evans, University of Houston, discussed the non-clinical movement of social psychology in our society. Richard T. Lyons, '17, reported on his attendance at the International Conference on the Earth Sciences at the Institute.—Edwin A. Reed, '45, 6243 Briar Rose, Houston 27, Texas.

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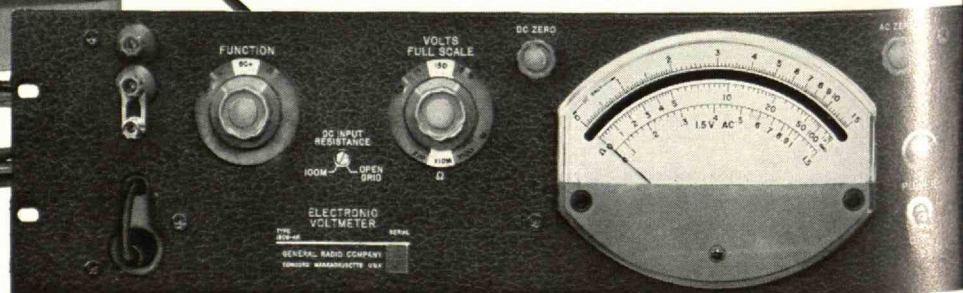
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